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NEWS 4	JAN 28	USPATFULL, USPAT2, and USPATOLD enhanced with new custom IPC display formats
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NEWS 13	FEB 29	WPINDEX/WPIDS/WPIX enhanced with ECLA and current U.S. National Patent Classification
NEWS 14	MAR 31	IFICDB, IFIPAT, and IFIUDB enhanced with new custom IPC display formats
NEWS 15	MAR 31	CAS REGISTRY enhanced with additional experimental spectra
NEWS 16	MAR 31	CA/CAplus and CASREACT patent number format for U.S. applications updated
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NEWS 22	APR 28	IMSRESEARCH reloaded with enhancements
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NEWS 24	MAY 30	DGENE, PCTGEN, and USGENE enhanced with new homology sequence search option
NEWS 25	JUN 06	EPFULL enhanced with 260,000 English abstracts
NEWS 26	JUN 06	KOREAPAT updated with 41,000 documents
NEWS 27	JUN 13	USPATFULL and USPAT2 updated with 11-character patent numbers for U.S. applications
NEWS 28	JUN 19	CAS REGISTRY includes selected substances from web-based collections
NEWS 29	JUN 25	CA/CAplus and USPAT databases updated with IPC

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 NEWS 30  JUN 30  AEROSPACE enhanced with more than 1 million U.S.
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 NEWS 31  JUN 30  EMBASE, EMBAL, and LEMBASE updated with additional
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```
=> s astaxanthin or xantophyll
          3308 ASTAXANTHIN
            56 ASTAXANTHINS
          3313 ASTAXANTHIN
                 (ASTAXANTHIN OR ASTAXANTHINS)
             4 XANTOPHYLL
             5 XANTOPHYLLS
             9 XANTOPHYLL
                 (XANTOPHYLL OR XANTOPHYLLS)
L1        3322 ASTAXANTHIN OR XANTOPHYLL

=> s l1 (l) monoester
          7834 MONOESTER
          6587 MONOESTERS
         12560 MONOESTER
                 (MONOESTER OR MONOESTERS)
L2          86 L1 (L) MONOESTER

=> s l2 (L) (caprylic or octanoic)
          7411 CAPRYLIC
         13551 OCTANOIC
L3           1 L2 (L) (CAPRYLIC OR OCTANOIC)

=> d l3

L3   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2006:1287293  CAPLUS
DN   147:166496
TI   Chemical synthesis of astaxanthin n-octanoic acid
     monoester and diester and evaluation of their oral absorbability
AU   Fukami, Harukazu; Namikawa, Koshi; Sugiura-Tomimori, Namino; Sumida,
     Motoo; Katano, Kenji; Nakao, Masahiro
CS   Department of Bioscience and Biotechnology, Faculty of Bioenvironmental
     Science, Kyotogakuen University, 1-1 Nanjyo, Sogabe-cho, Kameoka-city,
     Kyoto, 621-8555, Japan
SO   Journal of Oleo Science (2006), 55(12), 653-656
     CODEN: JOSOAP; ISSN: 1345-8957
PB   Japan Oil Chemists' Society
DT   Journal
LA   English
OS   CASREACT 147:166496
RE.CNT  14    THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> s l2 (L) (capric or decanoic)
          6201 CAPRIC
          9590 DECANOIC
             1 DECANOICS
          9590 DECANOIC
                 (DECANOIC OR DECANOICS)
L4           0 L2 (L) (CAPRIC OR DECANOIC)
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=> s l12 (lauric or dodecanoic)
MISSING OPERATOR 'L999 (LAURIC'
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l12 (L) (lauric or dodecanoic)
L12 NOT FOUND
The L-number entered could not be found.  To see the definition
of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> s l2 (L) (lauric or dodecanoic)
         19967 LAURIC
             2 LAURICS
         19968 LAURIC
                 (LAURIC OR LAURICS)
          9152 DODECANOIC
L5           0 L2 (L) (LAURIC OR DODECANOIC)

=> d his

     (FILE 'HOME' ENTERED AT 11:07:25 ON 21 JUL 2008)

     FILE 'CAPLUS' ENTERED AT 11:08:23 ON 21 JUL 2008
L1         3322 S ASTAXANTHIN OR XANTOPHYLL
L2           86 S L1 (L) MONOESTER
L3            1 S L2 (L) (CAPRYLIC OR OCTANOIC)
L4            0 S L2 (L) (CAPRIC OR DECANOIC)
L5            0 S L2 (L) (LAURIC OR DODECANOIC)

=> s l2 (L) (caproic or hexanoic)
          7257 CAPROIC
         16035 HEXANOIC
L6           0 L2 (L) (CAPROIC OR HEXANOIC)

=> d l2 1-11 ibib abs

L2   ANSWER 1 OF 86  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2008:269707  CAPLUS
DOCUMENT NUMBER:          149:28215
TITLE:                    Carotenoids and their fatty acid esters of spiny
                          lobster Panulirus japonicus
AUTHOR(S):                Maoka, Takashi; Akimoto, Naoshige
CORPORATE SOURCE:         Research Institute for Production Development, 15
                          Shimogamo-morimoto-cho, Sakyo-ku, Kyoto, 606-0805,
                          Japan
SOURCE:                   Journal of Oleo Science (2008), 57(3), 145-152
                          CODEN: JOSOAP; ISSN: 1345-8957
PUBLISHER:                Japan Oil Chemists' Society
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   Carotenoids and their fatty acid esters in the carapace of the spiny
     lobster Panulirus japonicus were investigated.  Fatty acid esters of
     astaxanthin, adonixanthin, and pectenolone were characterized by
     1H-NMR and FAB-MS.  The acylated position of adonixanthin and pectenolone
     monoesters was determined to be a hydroxy group at C-3' by 1H-NMR.  The
     fatty acids esterified with these carotenoids were identified as C22:6,
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C20:4, C20:5, C18:0, C18:1, C17:0, C16:0, C16:1, C14:0, and C12:0 from FAB-MS spectral data. Furthermore, 2,3-didehydrocanthaxanthin was first identified as a natural product.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:42674 CAPLUS
DOCUMENT NUMBER: 148:120689
TITLE: Squalene-containing oil composition and squalene-containing water-in-oil emulsion
INVENTOR(S): Fujisawa, Masaaki; Tanaka, Keiko; Oyama, Keiichi
PATENT ASSIGNEE(S): The Nisshin Oillio Group, Ltd., Japan
SOURCE: PCT Int. Appl., 34pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008004509	A1	20080110	WO 2007-JP63209	20070702

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: JP 2006-183333 A 20060703

AB Disclosed is a squalene-containing oil composition containing 1 - 60% by mass of squalene and 40 - 99% by mass of one or more polyglycerol fatty acid esters as an emulsifying agent. This oil composition contains more than two types of polyglycerol fatty acid esters consisting of polyglycerol fatty acid esters with a HLB value of 6 - 10 (component A), containing greater than 70 mass % of polyglycerol fatty acid monoester, and of polyglycerol fatty acid esters with a HLB value of 11 - 16 (component B). This squalene-containing oil composition is characterized in that the emulsifying agent in the squalene-containing oil composition has an HLB value of 6 - 15. Also disclosed is a squalene-containing water-in-oil emulsion which is characterized by being obtained by blending the squalene-containing oil composition with water or an aqueous solution Further disclosed is a food or beverage characterized by containing the squalene-containing water-in-oil emulsion. Still further disclosed is a method for producing a squalene-containing water-in-oil emulsion, which is characterized by blending the squalene-containing oil composition with water or an aqueous solution The oil components are selected from

one or more following group of soybean oil, cottonseed oil, sunflower oil, olive oil, kapok oil, safflower oil, rice oil, corn oil, rapeseed oil, palm oil, perilla oil, poppyseed oil, hydrogenated oil, rice germ oil, brown rice germ oil, wheat germ oil, tsubaki oil, palm kernel oil, adlay oil, macadamia nut oil, garlic oil, avocado oil, linseed oil, eucalyptus oil, egg oil, egg yolk oil, cacao butter, peanut oil, coconut oil, evening primrose oil, borage oil, jojoba oil, astaxanthin oil, lard, beef tallow, chicken fat, whale oil, tuna oil, sardine oil, mackerel oil, saury oil, skipjack oil, herring oil, docosahexaenoic acid (DHA), DHA-containing triglycerides, eicosapentaenoic acid (EPA), EPA-containing triglycerides, medium-chain fatty acid triglycerides, diglycerides, vitamin A, fatty acid esters of vitamin A, vitamin D, fatty acid esters of vitamin D, vitamin E, fatty acid esters of vitamin E, vitamin K, fatty acid esters of vitamin K, vitamin Q, fatty acid esters of vitamin Q and fatty acid esters of ascorbic acid.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 3 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:1056586 CAPLUS
DOCUMENT NUMBER: 147:391835
TITLE: Carotenoid-collagen peptide conjugates and preparation thereof
INVENTOR(S): Aoki, Mario; Sudo, Yukio
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007238564	A	20070920	JP 2006-66564	20060310

PRIORITY APPLN. INFO.: JP 2006-66564 20060310
OTHER SOURCE(S): MARPAT 147:391835

AB The invention provides a carotenoid-collagen peptide conjugate Cal-OCOCH2CH2CONH-Col (Cal represents carotenoid residue; Col represents collagen peptide chain), especially astaxanthin deriv-collagen peptide conjugate, wherein the carotenoid-collagen peptide conjugate has improved stability against air oxidation and light irradiation, and is suitable for use in an antiaging skin composition A method for preparation of the carotenoid-collagen peptide conjugate is also disclosed. For example, astaxanthin monoester with mixture of C18 unsatd. fatty acids was obtained from a culture product of Haematococcus. The astaxanthin monoester was reacted with succinic anhydride to give astaxanthin monoester carboxylic acid. N-hydroxyphthalimide, and then collagen peptide (FCP-A) to obtain a conjugate of the present invention. The carboxylate compound was reacted wit N-hydroxyphthalimide to give astaxanthin monoester phthalimide compound The phthalimide compound was reacted with collagen peptide (FCP-A) to obtain a conjugate of the present invention. The obtained conjugate was mixed with phospholipid copolymer surfactant (Lipidure-PMB) solution to make a solid dispersion (particle size ≤ 1

μm).

L2 ANSWER 4 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:1056579 CAPLUS
DOCUMENT NUMBER: 147:391834
TITLE: Skin compositions containing carotenoid-collagen peptide conjugates
INVENTOR(S): Aoki, Mario; Sudo, Yukio
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007238560	A	20070920	JP 2006-66481	20060310
PRIORITY APPLN. INFO.:			JP 2006-66481	20060310

OTHER SOURCE(S): MARPAT 147:391834
AB The invention relates to a skin composition for prevention of pigmentation and aging of skin, wherein the composition is characterized by containing carotenoid-collagen peptide conjugate Cal-OCOCH2CH2CONH-Col (Cal represents carotenoid residue; Col represents collagen peptide chain), especially astaxanthin deriv-collagen peptide conjugate. The composition may further contain active oxygen-scavenger, antioxidant, cell activator, antiinflammatory agent, tyrosinase inhibitor, UV absorber, and/or skin moisturizer. For example, astaxanthin C18 unsatd. fatty acid monoester was reacted with succinic anhydride, N-hydroxyphthalimide, and then collagen peptide (FCP-A) to obtain a conjugate of the present invention. The obtained conjugate was mixed with phospholipid copolymer surfactant (Lipidure-PMB) solution to make a solid dispersion (particle size ≤ 1 μm). The solid dispersion showed excellent storage stability and antioxidative effect. The solid dispersion was mixed with other ingredients at 0.001 % to give a skin-care lotion composition

L2 ANSWER 5 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:671739 CAPLUS
DOCUMENT NUMBER: 147:58401
TITLE: Astaxanthin and/or esters thereof for preventing diabetes
INVENTOR(S): Okada, Yumiharu; Iio, Kumiko
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007153846	A	20070621	JP 2005-354171	20051207
PRIORITY APPLN. INFO.:			JP 2005-354171	20051207

AB Astaxanthin and/or its esters obtained from Haematococcus prevent blood

sugar level hike from high-fat diets.

L2 ANSWER 6 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:475336 CAPLUS
DOCUMENT NUMBER: 147:71433
TITLE: Stabilization of astaxanthin in edible oils and its use as an antioxidant
AUTHOR(S): Rao, Ambati Ranga; Sarada, Ravi; Ravishankar, Gokare Aswathanarayana
CORPORATE SOURCE: Plant Cell Biotechnology Department, Central Food Technological Research Institute, Mysore, 570 020, India
SOURCE: Journal of the Science of Food and Agriculture (2007), 87(6), 957-965
CODEN: JSFAAE; ISSN: 0022-5142
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Astaxanthin, a ketocarotenoid (3,3'-dihydroxy-β,β-carotene-4,4'-dione), is produced in high concentration in the green alga Haematococcus pluvialis. It constitutes 85-88% of total carotenoid and exists in the monoester, diester and free form. Astaxanthin in its ester form is fairly stable in all edible oils such as rice bran, mustard, groundnut, gingelly, coconut and palm oil at room temperature with variation in terms of its loss in content and color during a 4 mo period. Rice bran, gingelly and palm oil retained 84-90% of astaxanthin when heated at 70°C for 8 h while palm oil was effective in retaining 90% of astaxanthin at 90°C for 8 h without any change in its ester form in comparison to 90% carotenoid loss in aqueous form. At 120 and 150°C, carotenoid loss was significant (60-90%) without change in the fatty acid profile of the edible oils. The antioxidant activity of carotenoids stored in oils was comparable to standard butylated hydroxy anisole (BHA).
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:300973 CAPLUS
DOCUMENT NUMBER: 147:8471
TITLE: Antioxidant activity of Haematococcus pluvialis cells grown in continuous culture as a function of their carotenoid and fatty acid content
AUTHOR(S): Ceron, M. C.; Garcia-Malea, M. C.; Rivas, J.; Acien, F. G.; Fernandez, J. M.; Rio, E.; Guerrero, M. G.; Molina, E.
CORPORATE SOURCE: Department of Chemical Engineering, University of Almeria, Almeria, 04071, Spain
SOURCE: Applied Microbiology and Biotechnology (2007), 74(5), 1112-1119
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The influence of culture conditions on the quality of Haematococcus pluvialis biomass is assessed. Continuously grown cells have been characterised with respect to their astaxanthin, fatty acid

content, and antioxidant activity and compared with those of non-growing haematocysts. Moderate limitation of nitrate availability (1.7 mM) under continuous growth conditions favored the production of reddish palmelloid cells whose exts. possessed antioxidant activity equivalent to that of haematocyst exts., despite the lower astaxanthin content (0.6% d.weight), which is compensated by a higher fatty acid level (7.6% d.weight). Green cells produced under nitrate saturation conditions (>4.7 mM) exhibit only 40% antioxidant activity than palmelloid. In addition, the major fatty acid present in palmelloid cells was oleic acid (40% f.a.), whereas, in both green cells and haematocysts, the main fatty acids were myristic, palmitic, and oleic acid (20-30% f.a. each). Biomass exts. were fractionated and analyzed. The antioxidant capacity was a function of both the carotenoid and the fatty acid profiles, the antioxidant capacity of astaxanthin diesters fraction being 60% higher than astaxanthin monoesters fraction and twice than free astaxanthin. In such a way, the evaluation of the quality of H. pluvialis biomass must take into account both variables. When considering the production of H. pluvialis biomass for human consumption, special attention should be paid to the one-step continuous system approach for the generation of cells rich in both astaxanthin and fatty acids, as they have high antioxidant activity but without thick hard cell wall.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 8 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1287293 CAPLUS

DOCUMENT NUMBER: 147:166496

TITLE: Chemical synthesis of astaxanthin n-octanoic acid monoester and diester and evaluation of their oral absorbability

AUTHOR(S): Fukami, Harukazu; Namikawa, Koshi; Sugiura-Tomimori, Namino; Sumida, Motoo; Katano, Kenji; Nakao, Masahiro

CORPORATE SOURCE: Department of Bioscience and Biotechnology, Faculty of Bioenvironmental Science, Kyotogakuen University, 1-1 Nanjyo, Sogabe-cho, Kameoka-city, Kyoto, 621-8555, Japan

SOURCE: Journal of Oleo Science (2006), 55(12), 653-656 CODEN: JOSOAP; ISSN: 1345-8957

PUBLISHER: Japan Oil Chemists' Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 147:166496

AB We chemical synthesized astaxanthin n-octanoic acid monoester and diester from free astaxanthin and n-octanoic acid by a dehydration reagent in 32 and 22% yield, resp. The oral absorbability of the n-octanoic acid monoester and diester was evaluated by examining the plasma and liver concns. of astaxanthin after oral administration of the compds. The monoester significantly increased the plasma and liver concentration of astaxanthin compared with the long-chain fatty acid ester mixture derived from Haematococcus algae. The diester is inclined to increase it although it is not significant. It is possible that medium-chain fatty acid esters give better oral-absorbability of astaxanthin than long-chain fatty acid esters.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 9 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1256614 CAPLUS
DOCUMENT NUMBER: 146:32403
TITLE: Trichogenous agent comprising astaxanthin
INVENTOR(S): Okada, Yumika
PATENT ASSIGNEE(S): Yamaha Hatsudoki Kabushiki Kaisha, Japan
SOURCE: U.S. Pat. Appl. Publ., 6pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060269497	A1	20061130	US 2006-437880	20060522
JP 2007001971	A	20070111	JP 2006-138751	20060518

PRIORITY APPLN. INFO.: JP 2005-155452 A 20050527
OTHER SOURCE(S): MARPAT 146:32403
AB A trichogenous agent containing astaxanthin and/or an ester thereof is provided. The trichogenous agent of the present invention has a very low toxicity, and thus has a high degree of safety and can be used over a long period of time. Thus, an astaxanthin monoester was prepared using Haematococcus pluvialis culture at 25° under irradiation with light while bubbling a gas containing 3% CO2 and its trichogenous effect was tested in mice in comparison to 1% minoxidil (pos. control) or ethanol (neg. control). A markedly superior trichogenous effect of the astaxanthin monoester was observed as compared to the neg. control. However, the trichogenous effect appeared a little later than in the pos. control group, suggesting that the astaxanthin monoester exhibited its trichogenous effect slowly over a long period of time. Moreover, in the test group, though the initial hair regrowth speed was low, the rate of progress of hair regrowth after the hairs begun to grow was higher than that in the pos. control group and higher than that in the neg. control group.

L2 ANSWER 10 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1219315 CAPLUS
DOCUMENT NUMBER: 146:44433
TITLE: Carotenoids in Solenocera indica and Aristeus alcocki, deep-sea shrimp from Indian waters
AUTHOR(S): Manjabhat, Sachindra Nakkarike; Narayan, Bhaskar; Subbanna, Mahendrakar Namdev
CORPORATE SOURCE: Department of Meat, Fish, and Poultry Technology, Central Food Technological Research Institute, Mysore, 570 013, India
SOURCE: Journal of Aquatic Food Product Technology (2006), 15(2), 5-16
CODEN: JAFPE5; ISSN: 1049-8850
PUBLISHER: Food Products Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Carotenoids are the major pigments responsible for the color of crustaceans like shrimp. Quant. and qual. distribution of carotenoids in different body components of deep-sea shrimp Solenocera indica and

Aristeus alcocki, from Indian waters were assessed. The yield of waste (head and carapace) from processing of these shrimp ranged from 62.6-65.6%. Carotenoid content was higher in A. alcocki and the highest total carotenoid content of 185.3 μg/g was observed in head of A. alcocki. Astaxanthin and its mono- and diesters (63.5-92.2%) were the major carotenoids in both the species of shrimp and the levels of esterified astaxanthin were higher than the free form of astaxanthin. The levels of astaxanthin esters were higher (61.7-70.8%) in A. alcocki compared to S. indica (43.8-58.4%). Highest unsatd. fatty acid content (60.5%) was observed in the carotenoid extract from head of A. alcocki, and the highest saturated fatty acid content (83.1%) was observed in the carotenoid extract from the carapace.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 11 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:408220 CAPLUS
DOCUMENT NUMBER: 145:99011
TITLE: Characterization of astaxanthin esters in Haematococcus pluvialis by liquid chromatography-atmospheric pressure chemical ionization mass spectrometry
AUTHOR(S): Miao, Fengping; Lu, Dayan; Li, Yeguang; Zeng, Mingtao
CORPORATE SOURCE: Wuhan Botanical Garden, Chinese Academy of Sciences, Wuhan, 430074, Peop. Rep. China
SOURCE: Analytical Biochemistry (2006), 352(2), 176-181
CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB After first being analyzed by HPLC, 4 free carotenoids, 15 astaxanthin monoesters, 12 astaxanthin diesters, and 3 astacin monoesters in Haematococcus pluvialis were identified by liquid chromatog.-atmospheric pressure chemical ionization mass spectrometry (LC-(APCI)MS). Identification of each compound was based on the characteristic fragment ions of the pos. ion mode, neg. ion mode, and MS2. Astaxanthin esters were identified based on the loss of one or two fatty acids. In a pos. ion mode, astaxanthin monoesters had characteristic fragment ions at m/z 597 [M+H-fatty acid]+ and m/z 579 and 561 that resulted from a continuous loss of water. The relative intensity of m/z 579 in MS2 amounted to more than 80% of that of the mol. ion. In astaxanthin diesters, the intensity of m/z 561 occasionally was equal to that of m/z 579, but in general the former, amounting to 50 to 60% or more of the mol. ion, was stronger than the latter, which decreased to 20 to 30% of the mol. ion. In addition, a set of compds. with maximum absorbance at 400 nm, detected by high-performance liquid chromatog.-diode array detector (HPLC-DAD), had strong characteristic fragment ions at m/z 871 and 593 in the pos. ion mode MS2. They were presumed to be linolenic acid or an isomer of ω-6-γ-linolenic acid esters of astacin.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l2 12-22 ibib abs

L2 ANSWER 12 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:76279 CAPLUS
DOCUMENT NUMBER: 144:121790
TITLE: Astaxanthin and/or its esters as atopic dermatitis inhibitors
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006022121	A	20060126	JP 2005-301156	20051017
PRIORITY APPLN. INFO.:			JP 2005-194694 A	20050704

AB Astaxanthin and/or its esters are claimed as atopic dermatitis inhibitors. Astaxanthin monoester was purified from Haematococcus pluvialis, and its antiallergic effect and cytotoxicity were tested.

L2 ANSWER 13 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:53407 CAPLUS
DOCUMENT NUMBER: 144:121818
TITLE: Blood neutral lipid-controlling agents containing astaxanthins and their use for treatment of neutral lipid-associated disorders
INVENTOR(S): Murakami, Nagisa; Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006016408	A	20060119	JP 2005-301155	20051017
US 2006029338?	A1	20061228	US 2006-455238	20060619
EP 1736149	A2	2006122?	EP 2006-253223	20060622
EP 1736149	A3	20070221		
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU				
PRIORITY APPLN. INFO.:			JP 2005-183016 A	20050623
			JP 2005-301155 A	20051017

OTHER SOURCE(S): MARPAT 144:121818
AB Title agents, useful for treatment of arteriosclerosis, cardiovascular disease, cerebrovascular disease, hyperlipidemia, and metabolic disorder, contain astaxanthin and/or its esters. Thus, administration of capsules containing 40 mg astaxanthin monoesters extracted from Haematococcus pluvialis K0084 for 4 wk lowered blood neutral lipid in volunteers. The toxicity of the monoesters was low in HUVEC.

L2 ANSWER 14 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:53373 CAPLUS
DOCUMENT NUMBER: 144:121854
TITLE: Antifatigue agents containing astaxanthins
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006016409	A	20060119	JP 2005-301157	20051017
PRIORITY APPLN. INFO.:			JP 2005-188594 A	20050628

OTHER SOURCE(S): MARPAT 144:121854
AB Title agents, useful for prevention and treatment of fatigue, contain astaxanthin and/or its esters. Thus, oral administration of astaxanthin monoesters extracted from Haematococcus pluvialis K0084 at 100 mg/kg to mice resulted in less fatigue in forced exercise. The toxicity of the monoesters was low in HUVEC.

L2 ANSWER 15 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:53365 CAPLUS
DOCUMENT NUMBER: 144:121800
TITLE: Phosphodiesterase inhibitors containing astaxanthins and their use for treatment of phosphodiesterase-associated diseases
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006016407	A	20060119	JP 2005-301153	20051017
US 20060287391	A1	20061221	US 2006-449857	20060609
EP 1733721	A2	20061220	EP 2006-253086	20060614
EP 1733721	A3	20070124		
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU				
PRIORITY APPLN. INFO.:			JP 2005-174749 A	20050615
			JP 2005-301153 A	20051017

OTHER SOURCE(S): MARPAT 144:121800
AB Title agents, useful for treatment of asthma, allergy, thrombosis, etc., contain astaxanthin and/or its esters. Thus, astaxanthin monoesters extracted from Haematococcus pluvialis K0084 inhibited phosphodiesterase with IC50 of 71.1 μM. The toxicity of the monoesters was low in HUVEC.

L2 ANSWER 16 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:32482 CAPLUS
DOCUMENT NUMBER: 144:81176
TITLE: Astaxanthin and/or its esters interleukin inhibitors
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006008717	A	20060112	JP 2005-301151	20051017
PRIORITY APPLN. INFO.:			JP 2005-159066 A	20050531

AB Astaxanthin and/or its esters are claimed as interleukin inhibitors for treatment of inflammatory diseases, allergy, asthma, and multiple myeloma. Astaxanthin monoester was purified from Haematococcus pluvialis cultures and its effects on IL-4, IL-6, IL-8 and cell viability were tested in human PBML and HUVEC cells.

L2 ANSWER 17 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:32478 CAPLUS
DOCUMENT NUMBER: 144:81175
TITLE: Astaxanthin and/or its esters as lipoxygenase inhibitors
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006008716	A	20060112	JP 2005-301150	20051017
PRIORITY APPLN. INFO.:			JP 2005-147681 A	20050520

AB Astaxanthin and/or its esters are claimed as lipoxygenase inhibitors for treatment of inflammatory diseases, allergy, and asthma. Astaxanthin monoester was purified from Haematococcus pluvialis cultures and its effects on lipoxygenase and cell viability were tested in human PBML and HUVEC cells.

L2 ANSWER 18 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:32362 CAPLUS
DOCUMENT NUMBER: 144:81185
TITLE: Astaxanthin and/or its esters for improving kidney function
INVENTOR(S): Okada, Yumiharu; Murakami, Nagisa
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006008720	A	20060112	JP 2005-301158	20051017
PRIORITY APPLN. INFO.:			JP 2005-197859 A	20050706

AB Astaxanthin and/or its esters are claimed for improving kidney function in nephropathy from inflammatory diseases, kidney ischemia, diabetes, hypertension, and other life habit-related diseases. Astaxanthin monoester was purified from Haematococcus pluvialis cultures, and its effects on kidney clearance and in vitro cytotoxicity on human HUVEC cells were tested. Formulation examples of capsules were also given.

L2 ANSWER 19 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:32358 CAPLUS
DOCUMENT NUMBER: 144:81243
TITLE: Astaxanthin and/or its esters as inhibitors for blood lipoperoxides
INVENTOR(S): Murakami, Nagisa; Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006008719	A	20060112	JP 2005-301154	20051017
PRIORITY APPLN. INFO.:			JP 2005-183015 A	20050623

AB Astaxanthin and/or its esters are claimed as inhibitors for blood lipoperoxides and health foods for treatment of related diseases, including inflammatory disease, liver disease, and brain disorder. Astaxanthin monoester was purified from Haematococcus pluvialis cultures, and its effects on blood lipoperoxides and cytotoxicity on human HUVEC cells were tested. Formulation examples of tablets were also given.

L2 ANSWER 20 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:32349 CAPLUS
DOCUMENT NUMBER: 144:81242
TITLE: Astaxanthin and/or its esters as cyclooxygenase-2 inhibitors
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 2006008718	A	20060112	JP 2005-301152		20051017
PRIORITY APPLN. INFO.:			JP 2005-164640	A	20050603

AB Astaxanthin and/or its esters are claimed as cyclooxygenase-2 inhibitors and health foods for treatment of COX-2-related diseases, including inflammatory disease, allergy, thrombosis, brain disorder, cancer, cardiovascular diseases, and life habit diseases. Astaxanthin monoester was purified from Haematococcus pluvialis cultures, and its effects on COX-1 and COX-2, and cytotoxicity were tested.

L2 ANSWER 21 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:32315 CAPLUS
DOCUMENT NUMBER: 144:81241
TITLE: Astaxanthin and/or its esters as capillary endothelium cell proliferation inhibitors
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2006008713	A	20060112	JP 2005-301147		20051017
PRIORITY APPLN. INFO.:			JP 2005-85526	A	20050324

AB Astaxanthin and/or its esters are claimed as capillary endothelium cell proliferation inhibitors for treatment of neoangiogenesis-related diseases, including tumor, rheumatism, diabetic retinopathy. Astaxanthin monoester was purified from Haematococcus pluvialis cultures, and its angiogenesis inhibiting effects were tested in human HUVEC cells.

L2 ANSWER 22 OF 86 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:32307 CAPLUS
DOCUMENT NUMBER: 144:81240
TITLE: Astaxanthin and/or its esters as phospholipase A2 inhibitors
INVENTOR(S): Okada, Yumiharu
PATENT ASSIGNEE(S): Yamaha Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2006008715	A	20060112	JP 2005-301149		20051017
PRIORITY APPLN. INFO.:			JP 2005-144610	A	20050517

AB Astaxanthin and/or its esters are claimed as phospholipase A2 inhibitors with min. toxicity for treatment of related diseases, including inflammatory and cardiovascular diseases. Astaxanthin

monoester was purified from Haematococcus pluvialis and its effects on phospholipase A2 and human HUVEC cells were tested.

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=> s l2 not haematococcus
          716 HAEMATOCOCCUS
L7         49 L2 NOT HAEMATOCOCCUS

=> d l7 1-11 ibib abs

L7   ANSWER 1 OF 49  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:        2008:269707  CAPLUS
DOCUMENT NUMBER:         149:28215
TITLE:                   Carotenoids and their fatty acid esters of spiny
                         lobster Panulirus japonicus
AUTHOR(S):               Maoka, Takashi; Akimoto, Naoshige
CORPORATE SOURCE:        Research Institute for Production Development, 15
                         Shimogamo-morimoto-cho, Sakyo-ku, Kyoto, 606-0805,
                         Japan
SOURCE:                  Journal of Oleo Science (2008), 57(3), 145-152
                         CODEN: JOSOAP; ISSN: 1345-8957
PUBLISHER:               Japan Oil Chemists' Society
DOCUMENT TYPE:           Journal
LANGUAGE:                English
AB   Carotenoids and their fatty acid esters in the carapace of the spiny
     lobster Panulirus japonicus were investigated.  Fatty acid esters of
     astaxanthin, adonixanthin, and pectenolone were characterized by
     1H-NMR and FAB-MS.  The acylated position of adonixanthin and pectenolone
     monoesters was determined to be a hydroxy group at C-3' by 1H-NMR.  The
     fatty acids esterified with these carotenoids were identified as C22:6,
     C20:4, C20:5, C18:0, C18:1, C17:0, C16:0, C16:1, C14:0, and C12:0 from
     FAB-MS spectral data.  Furthermore, 2,3-didehydrocanthaxanthin was first
     identified as a natural product.
REFERENCE COUNT:         18    THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS
                               RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7   ANSWER 2 OF 49  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:        2008:42674  CAPLUS
DOCUMENT NUMBER:         148:120689
TITLE:                   Squalene-containing oil composition and
                         squalene-containing water-in-oil emulsion
INVENTOR(S):             Fujisawa, Masaaki; Tanaka, Keiko; Oyama, Keiichi
PATENT ASSIGNEE(S):      The Nisshin Oillio Group, Ltd., Japan
SOURCE:                  PCT Int. Appl., 34pp.
                         CODEN: PIXXD2
DOCUMENT TYPE:           Patent
LANGUAGE:                Japanese
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ----------------    ----   --------    -------------------    --------
     WO 2008004509        A1    20080110    WO 2007-JP63209        20070702
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA,
             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG,
             KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL,
PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW,
GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: JP 2006-183333 A 20060703

AB Disclosed is a squalene-containing oil composition containing 1 - 60% by mass of squalene and 40 - 99% by mass of one or more polyglycerol fatty acid esters as an emulsifying agent. This oil composition contains more than two types of polyglycerol fatty acid esters consisting of polyglycerol fatty acid esters with a HLB value of 6 - 10 (component A), containing greater than 70 mass % of polyglycerol fatty acid monoester, and of polyglycerol fatty acid esters with a HLB value of 11 - 16 (component B). This squalene-containing oil composition is characterized in that the emulsifying agent in the squalene-containing oil composition has an HLB value of 6 - 15. Also disclosed is a squalene-containing water-in-oil emulsion which is characterized by being obtained by blending the squalene-containing oil composition with water or an aqueous solution Further disclosed is a food or beverage characterized by containing the squalene-containing water-in-oil emulsion. Still further disclosed is a method for producing a squalene-containing water-in-oil emulsion, which is characterized by blending the squalene-containing oil composition with water or an aqueous solution The oil components are selected from one or more following group of soybean oil, cottonseed oil, sunflower oil, olive oil, kapok oil, safflower oil, rice oil, corn oil, rapeseed oil, palm oil, perilla oil, poppyseed oil, hydrogenated oil, rice germ oil, brown rice germ oil, wheat germ oil, tsubaki oil, palm kernel oil, adlay oil, macadamia nut oil, garlic oil, avocado oil, linseed oil, eucalyptus oil, egg oil, egg yolk oil, cacao butter, peanut oil, coconut oil, evening primrose oil, borage oil, jojoba oil, astaxanthin oil, lard, beef tallow, chicken fat, whale oil, tuna oil, sardine oil, mackerel oil, saury oil, skipjack oil, herring oil, docosahexaenoic acid (DHA), DHA-containing triglycerides, eicosapentaenoic acid (EPA), EPA-containing triglycerides, medium-chain fatty acid triglycerides, diglycerides, vitamin A, fatty acid esters of vitamin A, vitamin D, fatty acid esters of vitamin D, vitamin E, fatty acid esters of vitamin E, vitamin K, fatty acid esters of vitamin K, vitamin Q, fatty acid esters of vitamin Q and fatty acid esters of ascorbic acid.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1219315 CAPLUS

DOCUMENT NUMBER: 146:44433

TITLE: Carotenoids in Solenocera indica and Aristeus alcocki, deep-sea shrimp from Indian waters

AUTHOR(S): Manjabhat, Sachindra Nakkarike; Narayan, Bhaskar; Subbanna, Mahendrakar Namdev

CORPORATE SOURCE: Department of Meat, Fish, and Poultry Technology,

Central Food Technological Research Institute, Mysore, 570 013, India
SOURCE: Journal of Aquatic Food Product Technology (2006), 15(2), 5-16
CODEN: JAFPE5; ISSN: 1049-8850
PUBLISHER: Food Products Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Carotenoids are the major pigments responsible for the color of crustaceans like shrimp. Quant. and qual. distribution of carotenoids in different body components of deep-sea shrimp Solenocera indica and Aristeus alcocki, from Indian waters were assessed. The yield of waste (head and carapace) from processing of these shrimp ranged from 62.6-65.6%. Carotenoid content was higher in A. alcocki and the highest total carotenoid content of 185.3 μg/g was observed in head of A. alcocki. Astaxanthin and its mono- and diesters (63.5-92.2%) were the major carotenoids in both the species of shrimp and the levels of esterified astaxanthin were higher than the free form of astaxanthin. The levels of astaxanthin esters were higher (61.7-70.8%) in A. alcocki compared to S. indica (43.8-58.4%). Highest unsatd. fatty acid content (60.5%) was observed in the carotenoid extract from head of A. alcocki, and the highest saturated fatty acid content (83.1%) was observed in the carotenoid extract from the carapace.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1082809 CAPLUS
DOCUMENT NUMBER: 144:270040
TITLE: Unambiguous detection of astaxanthin and astaxanthin fatty acid esters in krill (Euphausia superba Dana)
AUTHOR(S): Grynbaum, Marc David; Hentschel, Petra; Putzbach, Karsten; Rehbein, Jens; Krucker, Manfred; Nicholson, Graeme; Albert, Klaus
CORPORATE SOURCE: Institute of Organic Chemistry, University of Tuebingen, Tuebingen, Germany
SOURCE: Journal of Separation Science (2005), 28(14), 1685-1693
CODEN: JSSCCJ; ISSN: 1615-9306
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB HPLC atmospheric pressure chemical ionization (APCI)/MS, GC MS, HPLC diode array detection (DAD), and NMR were used for the identification of astaxanthin and astaxanthin fatty acid esters in krill (Euphausia superba Dana). Matrix solid phase dispersion was applied for the extraction of the carotenoids. This gentle and expeditious extraction technique for solid and viscous samples leads to distinct higher enrichment rates than the conventional liquid-liquid extraction The chromatog. separation was achieved employing a C30 RP column that allows the separation of shape-constrained geometrical isomers. A methanol/tert-butylmethyl ether/water gradient was applied. (all-E) Astaxanthin and the geometrical isomers were identified by HPLC APCI/MS, by coelution with isomerized authentic standard, by UV spectroscopy (DAD), and three isomers were unambiguously assigned by

microcoil NMR spectroscopy. In this method, microcoils are transversally aligned to the magnetic field and have an increased sensitivity compared to the conventional double-saddle Helmholtz coils, thus enabling the measurement on small samples. The carotenoid fatty acid esters were saponified enzymically with Lipase type VII from Candida rugosa. The fatty acids were detected by GC MS after transesterification, but also without previous derivatization by HPLC APCI/MS. C14:0, C16:0, C16:1, C18:1, C20:0, C20:5, and C22:6 were found in astaxanthin monoesters and in astaxanthin diesters. (all-E) Astaxanthin was identified as the main isomer in six fatty acid ester fractions by NMR. Quantitation was carried out by the method of internal standard (13-Cis) Astaxanthin (70 μg/g), 542 μg/g (all-E) astaxanthin, 36 μg/g unidentified astaxanthin isomer, 62 μg/g (9-cis) astaxanthin, and 7842 μg/g astaxanthin fatty acid esters were found.
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:480087 CAPLUS
DOCUMENT NUMBER: 143:171493
TITLE: Determination of Carotenoids in Spear Shrimp Shells (Parapenaeopsis hardwickii) by Liquid Chromatography
AUTHOR(S): Lin, Wan-Chin; Chien, John-Tung; Chen, Bing-Huei
CORPORATE SOURCE: Department of Nutrition and Food Science, Fu Jen University, Taipei, 242, Taiwan
SOURCE: Journal of Agricultural and Food Chemistry (2005), 53(13), 5144-5149
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The objectives of this study were to develop a HPLC method for anal. of carotenoids in spear shrimp shells and to compare the extraction efficiency of carotenoids by supercrit. carbon dioxide (SCD) and solvents. Results showed that the most appropriate HPLC method was accomplished by employing a Cosmosil 5C18-AR-II column and a mobile phase of methanol-dichloromethane-acetonitrile (90:5:5, volume/volume/volume) (A) and water (100%) (B) with the following gradient elution: 92% A and 8% B in the beginning, decreased to 4% B in 9.5 min, 1% B in 26 min, 0% B in 35 min, maintained for 25 min, and returned to 92% A and 8% B in 61 min. All-trans-astaxanthin and its two cis isomers, as well as 5 astaxanthin monoesters and 11 diesters were resolved within 60 min with a flow rate at 2 mL/min and detection at 480 nm. Astaxanthin diesters were found to contain 12 fatty acids, of which palmitic acid and stearic acid constituted a large portion, whereas astaxanthin monoesters were found to contain 10 fatty acids with arachidonic acid dominating. Solvent extraction could generate a higher content of trans-astaxanthin and astaxanthin esters, while SCD extraction could produce greater levels of 9-cis-astaxanthin and 13-cis-astaxanthin.
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:329616 CAPLUS

DOCUMENT NUMBER: 143:96576
TITLE: Effects of dietary astaxanthin on body astaxanthin, growth, and survival of Penaeus monodon postlarvae
AUTHOR(S): Pan, Chih-Hung; Chien, Yew-Hu
CORPORATE SOURCE: Department of Aquaculture, National Kaohsiung University of Marine Science and Technology, Kaohsiung, Taiwan
SOURCE: Taiwan Shuichan Xuehuikan (2004), 31(4), 269-280
CODEN: TSCKD6; ISSN: 0379-4180
PUBLISHER: Fisheries Society of Taiwan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Diets supplemented with 0, 80, and 240 mg astaxanthin kg-1 were fed to tiger prawn (Penaeus monodon) postlarvae for 4 wk to compare their growth, survival, and concentration and various forms of body astaxanthin. Free astaxanthin (FA), monoester astaxanthin (MA), diester astaxanthin (DA), and total astaxanthin (TA) of all shrimps decreased with time. In the fourth week, as compared to the control, the supplement of dietary astaxanthin at 80 mg kg-1 resulted in higher content of body FA and TA, consequently higher survival and growth. Further supplement up to 240 mg kg-1 neither increase content of all forms of body astaxanthin nor survival and growth. FA was more sensitive to dietary astaxanthin levels than DA and TA and reflected its difference in each weekly sampling. In turn, FA had more influence than DA and TA on growth and survival. MA had no correlation with both growth and survival at all samplings. The fraction of either esterified astaxanthin (MA or DA) to TA remained more stable than unesterified astaxanthin (FA) with respect to dietary astaxanthin level.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 7 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:30245 CAPLUS
DOCUMENT NUMBER: 140:267824
TITLE: Antioxidant defense system in the apple snail eggs, the role of ovorubin
AUTHOR(S): Dreon, Marcos S.; Schinella, Guillermo; Heras, Horacio; Pollero, Ricardo J.
CORPORATE SOURCE: Instituto de Investigaciones Bioquimicas de La Plata (INIBIOLP), CONICET-UNLP, La Plata, Argent.
SOURCE: Archives of Biochemistry and Biophysics (2004), 422(1), 1-8
CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel role of ovorubin as a protection system against oxidative damage in eggs from Pomacea canaliculata was investigated. Carotenoid composition, and their antioxidant capacity, as well as the carotenoid-apoprotein interaction, were studied for this lipoglycocarotenoprotein. Carotenoid exts. from ovorubin were analyzed by TLC and spectrophotometry. The major carotenoid was astaxanthin in its free (40%), monoester (24%), and diester (35%) forms, mainly esterified with 16:0 fatty acid. The antioxidant capacity of ovorubin carotenoids was studied by the inhibition of microsomal oxidation in a non-enzymic system, showing strong

protection against oxidative damage (IC50 = 3.9 nmol/mg protein). The carotenoid-apoprotein interaction was studied by spectrophotometry and electrophoresis using reconstituted ovorubin. Astaxanthin does not seem to affect the structural characteristics of ovorubin, however the carotenoid-protein association significantly protected astaxanthin against oxidation Ovorubin therefore, besides its role in providing energy and structural precursors during embryogenesis, would be an antioxidant carrier, protecting at the same time this pigment from oxidation in the perivitellin fluid environment of the egg.
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:766602 CAPLUS
DOCUMENT NUMBER: 140:402597
TITLE: Fatty acids of astaxanthin esters in krill determined by mild mass spectrometry
AUTHOR(S): Takaichi, Shinichi; Matsui, Kumi; Nakamura, Masahisa; Muramatsu, Mizuho; Hanada, Satoshi
CORPORATE SOURCE: Biological Laboratory, Nippon Medical School, Kosugi-cho, Nakahara, Kawasaki, 211-0063, Japan
SOURCE: Comparative Biochemistry and Physiology, Part B: Biochemistry & Molecular Biology (2003), 136B(2), 317-322
CODEN: CBPBB8; ISSN: 1096-4959
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Krill is a major source of astaxanthin, which has strong antioxidant activity. Fractions with astaxanthin monoesters and diesters of Antarctic krill Euphausia superba were isolated. Astaxanthin esters were separated by C18-HPLC depending on the number of carbons and double bonds of esterified fatty acid(s). Small amts. of other lipids remained in the samples, but relative mol. masses of carotenoid esters could be measured by field desorption mass spectrometry without fragmentation and interference from contaminant lipids. The fatty acids were determined by calcn. of difference between astaxanthin and astaxanthin esters. Only five kinds of fatty acids, dodecanoate, tetradecanoate, hexadecanoate, hexadecenoate and octadecenoate, were detected. Fast atom bombardment mass spectrometry and secondary ion mass spectrometry showed similar spectra. The fatty acid composition in astaxanthin esters was different from those in krill lipids. Therefore, determination of fatty acids in carotenoid esters by a combination of HPLC elution profile and mild mass spectrometry is found to be a useful tool.
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:854114 CAPLUS
DOCUMENT NUMBER: 138:166823
TITLE: Astaxanthin from the red crab langostilla (Pleuroncodes planipes): optical R/S isomers and fatty acid moieties of astaxanthin esters
AUTHOR(S): Coral-Hinostroza, Gladis Nancy; Bjerkeng, Bjorn
CORPORATE SOURCE: AKVAFORSK, Institute of Aquaculture Research AS,

Sunndalsora, N-6600, Norway
SOURCE: Comparative Biochemistry and Physiology, Part B: Biochemistry & Molecular Biology (2002), 133B(3), 437-444
CODEN: CBPBB8; ISSN: 1096-4959
PUBLISHER: Elsevier Science Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The composition of the fatty acids of astaxanthin esters and the distribution of astaxanthin optical R/S isomers in the esterified and unesterified astaxanthin fractions extracted from the meal of the pelagic red crab langostilla (Pleuroncodes planipes; Decapoda, Anomura) were determined Astaxanthin diesters comprised approx. 70%, monoesterified astaxanthin approx. 12%, and unesterified astaxanthin approx. 10% of total carotenoids, resp. Unidentified carotenes and minor yellow xanthophylls represented approx. 8% of the total carotenoids. Three astaxanthin diester fractions (ratio 5:4:1) and one monoester fraction were clearly distinguished by thin-layer chromatog., and fatty acid moieties were determined in all of them. Saturated fatty acids accumulated in astaxanthin diesters, but were reduced in the monoester fraction when compared to langostilla crude oil extract (CE). Astaxanthin diesters, but not monoesters were enriched in C16:0 and C18:1n-9, when compared to the CE. Astaxanthin monoesters were rich in polyunsatd. fatty acids (≈70% of total fatty acids), in particular C20:5n-3 and C22:6n-3. Acylation of astaxanthin in langostilla seems to be selective rather than specific. The three diesterified astaxanthin fractions of langostilla had a ratio of approx. 3:1:3 between the (3R,3'R)-, (3R,3'S)-, and (3S,3'S)-astaxanthin isomers, whereas in the monoesterified and unesterified fractions the ratio was approx. 4:1:4. The astaxanthin optical R/S isomer composition indicates that langostilla is unable to racemize astaxanthin.
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:289942 CAPLUS
DOCUMENT NUMBER: 134:300815
TITLE: Protein kinase inhibitor for therapeutic uses
INVENTOR(S): Furubayashi, Makio; Hirano, Yoko; Morishita, Megumi; Nomaki, Kakuo; Marubayashi, Osamu
PATENT ASSIGNEE(S): Higashimaru Shoyu Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001114683	A	20010424	JP 1999-288485	19991008
PRIORITY APPLN. INFO.:			JP 1999-288485	19991008

AB Astaxanthin monoesters are used as protein kinase inhibitors. These inhibitors appear to be effective in controlling cancer.

L7 ANSWER 11 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:21609 CAPLUS
DOCUMENT NUMBER: 134:206894
TITLE: Concentration of esterified astaxanthin in euphausiid oil
AUTHOR(S): Hara, Setsuko; Omata, Tomoya; Tanaka, Yukihisa; Hibino, Hidehiko; Totani, Yoichiro
CORPORATE SOURCE: Faculty of Engineering, Seikei University, Musashino, 180-8633, Japan
SOURCE: Journal of Oleo Science (2001), 50(1), 73-76
CODEN: JOSOAP; ISSN: 1345-8957
PUBLISHER: Japan Oil Chemists' Society
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB A new method was established for concentrating esterified astaxanthin (Asta) in krill oil. This oil was found to consist of triacylglycerols, free fatty acids, phospholipids and 0.086% Asta, which was composed of 52.5% diester form, 33.3% monoester form and 14.2% free form. By Florisil column and silica gel column fractionations, diesterified Asta could be concentrated by more than 230 times from euphausiid oil. The content and recovery of diesterified Asta in the triacylglycerol fraction were 20% and 73%, resp. By the present method, naturally occurring diesterified Asta could be easily concentrated in the triacylglycerol fraction. The Asta concs. may be used as available materials possessing antioxidative and some physiol. activities.

=> d l7 12- 22 ibib aba
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ALL --------- BIB, AB, IND, RE
APPS -------- AI, PRAI
BIB --------- AN, plus Bibliographic Data and PI table (default)
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CBIB -------- AN, plus Compressed Bibliographic Data
CLASS ------- IPC, NCL, ECLA, FTERM
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DMAX -------- MAX, delimited for post-processing
FAM --------- AN, PI and PRAI in table, plus Patent Family data
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IND --------- Indexing data
IPC --------- International Patent Classifications
MAX --------- ALL, plus Patent FAM, RE
PATS -------- PI, SO
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SCAN -------- CC, SX, TI, ST, IT (random display, no answer numbers; SCAN must be entered on the same line as the DISPLAY, e.g., D SCAN or DISPLAY SCAN)
STD --------- BIB, CLASS

IABS -------- ABS, indented with text labels
IALL -------- ALL, indented with text labels
IBIB -------- BIB, indented with text labels

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IMAX -------- MAX, indented with text labels
ISTD -------- STD, indented with text labels

OBIB -------- AN, plus Bibliographic Data (original)
OIBIB ------- OBIB, indented with text labels

SBIB -------- BIB, no citations
SIBIB ------- IBIB, no citations

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HITRN ------- HIT RN and its text modification
HITSTR ------ HIT RN, its text modification, its CA index name, and
              its structure diagram
HITSEQ ------ HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
              its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
KWIC -------- Hit term plus 20 words on either side
OCC --------- Number of occurrence of hit term and field in which it occurs

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L7   ANSWER 12 OF 49  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2000:323165  CAPLUS
DOCUMENT NUMBER:          133:117614
TITLE:                    Astaxanthin and its metabolites idoxanthin and
                          crustaxanthin in flesh, skin, and gonads of sexually
                          immature and maturing Arctic charr (Salvelinus alpinus
                          (L.))
AUTHOR(S):                Bjerkeng, B.; Hatlen, B.; Jobling, M.
CORPORATE SOURCE:         Akvaforsk, Institute of Aquaculture Research AS,
                          Sunndalsora, N-6600, Norway
SOURCE:                   Comparative Biochemistry and Physiology, Part B:
                          Biochemistry & Molecular Biology (2000), 125B(3),
                          395-404
                          CODEN: CBPBB8; ISSN: 0305-0491
PUBLISHER:                Elsevier Science Inc.
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   Carotenoid compns. of the flesh, skin, and ovaries were determined in sexually
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maturing and immature Arctic charr (Salvelinus alpinus) fed diets supplemented with astaxanthin (optical isomer ratio (3S,3'S):(3R,3'S; meso):(3R,3'R); 1:2:1). Astaxanthin comprised 64-79% of the flesh carotenoids, and the 3',4'-cis and 3',4'-trans glycolic isomers of idoxanthin, present in a 1:1 ratio, represented 20-35%. The flesh of the sexually maturing charr contained relatively more idoxanthin than that of sexually immature fish (20 vs. 35% of total carotenoids), possibly being indicative of a higher metabolic turnover of astaxanthin in the latter. The relative proportions of flesh carotenoids were unaffected by sex. The relative carotenoid composition of ovaries was similar in sexually maturing and immature females. The 3',4'-cis and 3',4'-trans glycolic isomers of idoxanthin (ratio 0.7:1) were the major carotenoids (56% of total), followed by crustaxanthin (20%), and astaxanthin comprised less than 5% of ovarian carotenoids. Three glycolic isomers of crustaxanthin were detected (3,4,3',4'-di-cis-:3,4-cis-3',4'-trans-:3,4,3',4'-di-trans-glycolic isomer ratio 2.6:3.1:1) in the ovaries. Sex and maturity status had no apparent effect on the relative composition of skin carotenoids. The skin carotenoids consisted mainly of diesters (82-87% of total carotenoids) and monoesters (7-13% of total carotenoids). Saponification revealed that astaxanthin comprised 85% and idoxanthin 10% of total carotenoids, and minor amts. of tunaxanthin-, lutein-, and zeaxanthin-like metabolites were also present. Maturity status seems to be more important than sex in determining the relative carotenoid composition of the tissues of Arctic charr, with astaxanthin and its metabolites being selectively accumulated in different tissues.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 13 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:679724 CAPLUS
DOCUMENT NUMBER: 131:271025
TITLE: Production method for astaxanthin esters
INVENTOR(S): Tanaka, Yukihisa; Hibino, Hidehiko
PATENT ASSIGNEE(S): Nippon Oil and Fats Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11290094	A	19991026	JP 1998-93439	19980406

PRIORITY APPLN. INFO.: JP 1998-93439 19980406

AB Astaxanthin mono and diesters are manufactured with (un)immobilized lipase from astaxanthin and fatty acids. The fatty acids are selected from (un)branched C14-22 fatty acids. Manufacture of astaxanthin esters from oleic acid and astaxanthin with lipase of Candida was shown.

L7 ANSWER 14 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:517948 CAPLUS
DOCUMENT NUMBER: 132:21279
TITLE: Carotenoid pigments in echiurid, Urechis unicinctus
AUTHOR(S): Kim, Soo Young; Ha, Bong Seuk

CORPORATE SOURCE: Dept. of Food and Nutrition, Gyeongsang National University, Jinju, 660-701, S. Korea
SOURCE: Han'guk Susan Hakhoechi (1999), 32(2), 223-231
CODEN: HSHKAW; ISSN: 0374-8111
PUBLISHER: Korean Fisheries Society
DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB Carotenoid pigments of echiurid, Urechis unicinctus were investigated during Mar., Apr. and May as a part of comparative biochem. studies of carotenoid pigments for the marine organisms other than pisces. Total carotenoid contents were found to be 1.19 mg/100g in Mar., 0.98 mg/100g in Apr. and 0.84 mg/100g in May, indicating that total carotenoid content was neg. affected by the temperature of sea water that echiurid resided. The carotenoid isolated in Mar. composed of 16.3% diatoxanthin monoester, 14.8% β-carotene and 12.6% cynthiaxanthin monoester, 8.4% cynthiaxanthin diester, 8.2% zeaxanthin monoester, 7.3% diatoxanthin diester, 4.2% astaxanthin, 2.9% diatoxanthin, 2.4% triol, 2.3% cynthiaxanthin, 1.7% isocryptoxanthin, 1.5% zeaxanthin diester, 0.8% zeaxanthin and 0.5% lutein. The carotenoid isolated in Apr. composed of 21.9% diatoxanthin monoester, 17.2% cynthiaxanthin monoester and 16.6% β-carotene, 10.9% zeaxanthin monoester, 5.6% cynthiaxanthin diester, 4.9% diatoxanthin diester, 3.1% astaxanthin, 2.4% triol, 2.3% diatoxanthin, 1.7% isocryptoxanthin, 1.5% lutein, 1.1% zeaxanthin, 1.0% cynthiaxanthin and 1.0% zeaxanthin diester. Similarly, the carotenoid isolated in May composed of 25.3% diatoxanthin monoester, 19.7% cynthiaxanthin monoester, 13.0% β-carotene, and 12.6% zeaxanthin monoester, 5.8% cynthiaxanthin diester, 5.1% diatoxanthin, 3.0% astaxanthin, 2.4% triol, 2.2% diatoxanthin, 1.3% isocryptoxanthin, 1.2% zeaxanthin, 1.1% zeaxanthin diester, 1.0% lutein and 0.9% cynthiaxanthin. Based on these data, monoester -type carotenoids (37.1.apprx.57.6%) and diester-type carotenoids (11.5.apprx.17.2%) of total carotenoids in echiurid were the major carotenoids. Meanwhile, when the sea water temperature was elevated and the contents of total carotenoid in echiurids were decreased, the contents of zeaxanthin monoester, diatoxanthin monoester and cynthiaxanthin monoester were increased, but the contents of zeaxanthin diester, diatoxanthin diester and cynthiaxanthin diester were decreased, indicating that changes in ester-type carotenoids were differently affected by the sea water temperature

L7 ANSWER 15 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:358926 CAPLUS
DOCUMENT NUMBER: 126:334423
ORIGINAL REFERENCE NO.: 126:64925a,64928a
TITLE: Use of astaxanthin for the treatment of stress
INVENTOR(S): Asami, Sumio; Yang, Zhi-Bo; Yamashita, Eiji; Otoze, Hayato
PATENT ASSIGNEE(S): Suntory Limited, Japan; Itano Refrigerated Food Co., Ltd.
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 770385	A1	19970502	EP 1996-307737	19961025
R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 09124470	A	19970513	JP 1995-279225	19951026
NZ 299641	A	20010330	NZ 1996-299641	19961024
AU 9670404	A	19970501	AU 1996-70404	19961025
AU 725308	B2	20001012		
US 6265450	B1	20010724	US 1996-740325	19961028
PRIORITY APPLN. INFO.:			JP 1995-279225 A	19951026

AB An anti-stress composition having for its active ingredient astaxanthin and/or its ester is disclosed. This composition can be in the form of a pharmaceutical, functional food, food or beverage and so forth. Astaxanthin (I) was orally administered to at a rate of 100 mg/kg 3 times/daily to mice retrained for 20 h in metal restraint cages under conditions of minimal body movement and access to drinking water to induce restraint stress. The mice were sacrificed 48 h after the start of restraint and thymus gland was excised and weighed. Weight decrease was significantly inhibited by I as compared with controls, thus confirming the stress inhibitory effects of I. Krill extract oil (containing 3.75% I diester and 1.53% monoester) was filled into soft capsules containing gelatin 70.0, glycerin 22.9, Me parahydroxybenzoate 0.15, Pr parahydroxybenzoate 0.51, and water q.s. 100% to obtain capsules weighting 180 mg each.

L7 ANSWER 16 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:	1995:970228 CAPLUS
DOCUMENT NUMBER:	124:25946
ORIGINAL REFERENCE NO.:	124:4915a,4918a
TITLE:	Carotenoids in the tiger prawn Penaeus esculentus during ovarian maturation
AUTHOR(S):	Dall, W.; Smith, D. M.; Moore, L. E.
CORPORATE SOURCE:	Division of Fisheries, CSIRO Marine Laboratories, Cleveland, 4163, Australia
SOURCE:	Marine Biology (Berlin) (1995), 123(3), 435-41 CODEN: MBIOAJ; ISSN: 0025-3162
PUBLISHER:	Springer
DOCUMENT TYPE:	Journal
LANGUAGE:	English

AB Female P. esculentus were collected by 15-20 min duration trawls during 1990. Carotenoids were analyzed in the digestive gland, abdominal muscle, the remainder of the body (hereafter called integument), and ovary of prawns in stages 2-4 (fully mature) of maturation. The only oxycarotenoids (xanthophylls) identified were astaxanthins or astaxanthin esters; occasionally low levels of β-carotene were detected in the digestive gland. The concns. of astaxanthin monoesters (AM) and diesters (AD) were highest, with only minor amts. of free astaxanthins (Ast), except in the maturing ovaries, where free astaxanthins predominated (<80% of the total carotenoid). Of the total carotenoid, 82-94% was in the integument, but at maturity the digestive gland contained 10.7% and the ovary 5.6% of the total carotenoid. Only the ovary increased in mass during maturation, reaching <5.2% of total prawn mass. During this period, digestive gland concns. of AM, AD, and Ast all increased (total 20-120 μg/g); levels in the muscle and integument varied little throughout maturation (total .apprx.0.4 and 100 μg/g, resp.); ovary AM levels remained low

throughout (1.5-1.2 μg/g), AD increased from only 2 to 5 μg/g, but Ast increased from 2 to 34 μg/g. Apart from the ovary, AM concns. were the most variable. In common with other decapod Crustacea, the maturing ovary of P. esculentus contained high levels of carotenoids, indicating that these may have an important role in early development. The natural diet of P. esculentus includes a variety of carotenoids, but except for a little β-carotene, the digestive gland, where absorption occurs, contained astaxanthins, with only an occasional trace of β-carotene. This suggests that the conversion of dietary carotenoids to astaxanthin occurs soon after ingestion.

L7 ANSWER 17 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:748226 CAPLUS
DOCUMENT NUMBER: 123:139156
ORIGINAL REFERENCE NO.: 123:24673a,24676a
TITLE: Pigment and structural changes in Chlorella zofingiensis upon light and nitrogen stress
AUTHOR(S): Bar, Etan; Rise, Moshe; Vishkautsan, Marina; Arad, Shoshana
CORPORATE SOURCE: Inst. Appl. Res., Ben-Gurion Univ. Negev, Beer Sheva, 84105, Israel
SOURCE: Journal of Plant Physiology (1995), 146(4), 527-34
CODEN: JPPHEY; ISSN: 0176-1617
PUBLISHER: Fischer
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The green alga Chlorella zofingiensis was found to respond very rapidly to exposure to combined conditions of high light intensity and nitrogen deficiency by accumulation of secondary carotenoids. Accumulation of secondary carotenoids was detected as early as 60 min after induction to light stress (300 μmol m-2 s-1) in a nitrogen-free medium. Canthaxanthin and astaxanthin (free and monoesters) were detected 2-3 h later, and after an addnl. 12 h an astaxanthin diester also appeared. The accumulation of total secondary carotenoids was linear in relation to time. After 24 h the main secondary carotenoids were the monoester of astaxanthin (about 50% of total secondary carotenoids) and canthaxanthin (20-25%). During the first 8 h of stress the content of the primary carotenoids β-carotene and lutein increased but subsequently the content of both chlorophyll and the primary carotenoids was reduced. The reduction in the content of the photosynthetic pigments was followed by a degradation of thylakoids and a reduction of the potential rate of photosynthesis (α), but not of Pmax. After 3 days under light stress the chloroplast was modified to a chromoplast-like organelle, full of secondary carotenoids and free of thylakoid membranes. Twelve hours after the induction of stress, lipid bodies containing secondary carotenoids appeared around the chloroplast and accumulated at the periphery of the cell. The profile of the secondary carotenoids in the lipid bodies was similar to that in the chromoplast, both containing double the amount of astaxanthin diester and half the amount of free astaxanthin as compared with total cell carotenoids. After 3 days under stress, a hydrophobic layer rich in secondary carotenoids formed inside the cell wall. The results suggested that the lipid layer functions as a light filter to reduce irradiation of the cell components, to prevent photooxidative damage and to reduce water losses.

L7 ANSWER 18 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:745477 CAPLUS
TITLE: Evolution of carotenoid metabolic capabilities during the early development of the European lobster Homarus gammarus (Linne, 1758)
AUTHOR(S): Mantiri, M. H.; Negre-Sadargues, Genevieve; Castillo, Rene; Trilles, Jean-Paul
CORPORATE SOURCE: Laboratoire d'Ecophysiologie Invertebres, Univ. Montpellier II, Sci. Techniques Languedoc, Montpellier, 34095, Fr.
SOURCE: Comparative Biochemistry and Physiology, B: Biochemistry and Molecular Biology (1995), 111B(4), 553-8
CODEN: CBPBB8; ISSN: 0305-0491
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The quantification of carotenoids during the early developmental stages of the European lobster Homarus gammarys, indicates a rapid decrease of pigment concentration, occurring immediately after hatching. Conversely, the carotenoid amount of the individual increases progresively at the end of larval stage I, as a result of an enhanced feeding activity. Free astasanthin represents the bulk of carotenoids of the unhatched embryo (metanauplius), whereas larval, post-larval and juvenile stages exhibit the typical adult carotenoid patterns, in which astaxathin esterified forms (diester and monoester) appear preponderant. The Artemia strain used as food material is not found to contain astaxanthin , while important amts. of canthaxanthin are observed; nevertheless, this carotenoid is not detected in the larvae, indicating that metaboloic transformation capabilities are already occurring in freshly hatched individuals.

L7 ANSWER 19 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:313215 CAPLUS
DOCUMENT NUMBER: 122:104668
ORIGINAL REFERENCE NO.: 122:19695a,19698a
TITLE: Metabolism of dietary carotenoids and effects to intensify the body color of cultured sea bass
AUTHOR(S): Kang, Dong-Soo; Ha, Bong-Seuk
CORPORATE SOURCE: Department of Food and Nutrition, Yosu National Fisheries University, Yosu, 550-749, S. Korea
SOURCE: Han'guk Susan Hakhoechi (1994), 27(3), 272-81
CODEN: HSHKAW; ISSN: 0374-8111
PUBLISHER: Korean Fisheries Society
DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB To investigate the effects on pigmentation and carotenoids metabolism of sea bass, Lateolabrax japonicus, by supplemented carotenoids, fish were fed the diets each containing β-carotene, lutein ester, astaxanthin , astaxanthin monoester and astaxanthin diester for 8 wk. Carotenoids in the integuments were analyzed. The important carotenoids in the integuments of sea bass were tunaxanthin and lutein. β-Carotene, β-cryptoxanthin, zeaxanthin and β-carotene triol were minor contributors. Differences in the content of β-carotene, tunaxanthin fraction and lutein were observed between the natural and cultured sea bass. The wild sea bass contained higher amts. of tunaxanthin fraction and lutein, but contained lower amts. of β-carotene than cultured sea bass. In cultured sea bass with

supplemented carotenoids, carotenoid deposition was higher in order of astaxanthin monoester group, astaxanthin group and astaxanthin diester group. Based on the contents and composition of carotenoids in each group after the feeding the exptl. diet. The metabolism of carotenoid in sea bass was presumed to be the reductive metabolic pathways: astaxanthin to tunaxanthin via β-carotene triol, zeaxanthin and lutein.

L7 ANSWER 20 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:598905 CAPLUS
DOCUMENT NUMBER: 121:198905
ORIGINAL REFERENCE NO.: 121:36022h,36023a
TITLE: Purification and characterization for a carotenoprotein from Penaeus orientalis
AUTHOR(S): Lee, Sur-Koo; Kim, Jae-Woong
CORPORATE SOURCE: Natl. Ind. Technol. Inst., Ewacheon, 427-010, S. Korea
SOURCE: Journal of the Korean Chemical Society (1994), 38(8), 608-15
CODEN: JKCSEZ; ISSN: 1017-2548
DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB The isolation, purification and characterization of a carotenoprotein from the carapace of Pnaeus orientalis were investigated. The carotenoprotein was purple with broad λmax between 480, 409, 318 and 280 nm. Apparent structures were estimated by using X-ray diffractometry and scanning electron microscope, resp. The mol. weight of the carotenoprotein complex had been determined by GPC and PAGE. The heavier complex, designated the α-form (M.W = 170 KDa), was dissociated to a major subunit, β-form (M.W = 42 KDa). SDS-PAGE of α-form showed apparently oligomeric pattern, and also β-form gave two polypeptides corresponding to 22 KDa and 19 KDa, resp. The amino acid of the two proteins (α- and β-form), lipid and free fatty acid compns. were described. The prosthetic groups of the carotenoprotein were confirmed by TLC, IR, 1H-NMR, MS and various organic reactions as astaxanthin, astaxanthin monoester and astaxanthin diester.

L7 ANSWER 21 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:530466 CAPLUS
DOCUMENT NUMBER: 121:130466
ORIGINAL REFERENCE NO.: 121:23497a,23500a
TITLE: Carotenoid composition in the exoskeleton of commercial black tiger prawns
AUTHOR(S): Okada, Shigeru; Nur-E-Borhan, Shah Amran; Yamaguchi, Katsumi
CORPORATE SOURCE: Fac. Agric., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Fisheries Science (1994), 60(2), 213-15
CODEN: FSCIEH; ISSN: 0919-9268
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Carotenoid content and composition of com. black tiger prawns Penaeus monodon exhibiting different body color were determined A consistency was observed between the depth of body color of prawns and the carotenoid content of 2.3-33.1 mg/100 g in their exoskeleton. Astaxanthin was the major component in all the prawns, amounting to 86-98% of total carotenoids. Three forms of astaxanthin, namely diester, monoester, and free ones, were found. Cultured black tiger prawns accumulated preferentially astaxanthin monoester in

their exoskeleton, when the total carotenoid content exceeded .apprx.8 mg/100 g. Thus the external coloring in carotenoid-rich prawns may be due to interaction between the color of astaxanthin esters and that of carotenoprotein.

L7 ANSWER 22 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:186836 CAPLUS
DOCUMENT NUMBER: 120:186836
ORIGINAL REFERENCE NO.: 120:32901a,32904a
TITLE: Algal carotenoids 52; secondary carotenoids of algae 3; carotenoids in a natural bloom of Euglena sanguinea
AUTHOR(S): Grung, Merete; Liaaen-Jensen, Synnoeve
CORPORATE SOURCE: Norw. Inst. Technol., Univ. Trondheim, Trondheim, N-7034, Norway
SOURCE: Biochemical Systematics and Ecology (1993), 21(8), 757-63
CODEN: BSECBU; ISSN: 0305-1978
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Quant. carotenoid anal. of a natural bloom of Euglena sanguinea Ehrenberg revealed the presence of β,β-carotene (1% of total carotenoids), monoesters of adonirubin (3%), diesters of (3S, 3'R)-adonixanthin (13%), diesters of (3S, 3'S)-astaxanthin (75%), 19-monoester of (3R, 3'R, 6R)-loroxanthin (1%), (3R, 3'R)-diatoxanthin (6%), diadinoxanthin (1%) and neoxanthin (traces). The carotenoid content amounted to 0.7% of the dry weight Methods employed included TLC, HPLC, VIS, MS, CD and 1H NMR (400 and 500 MHz). The high content of ketocarotenoids is characteristic of secondary carotenoids produced under stressed growth conditions. Previously, secondary carotenoids were associated with green algae (Chlorophyceae), but have now been encountered in Euglenophyceae.

L7 ANSWER 23 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:76165 CAPLUS
DOCUMENT NUMBER: 120:76165
ORIGINAL REFERENCE NO.: 120:13691a,13694a
TITLE: Metabolism of dietary carotenoids and their effect on the improvement of pigmentation of cultured flounder and red sea bream.
AUTHOR(S): Ha, Bong Seuk; Kang, Dong Soo; Kim, Jong Hyun; Choi, Ok Soo; Ryu, Ho Young
CORPORATE SOURCE: Dep. Food Nutr., Gyeongsang Natl. Univ., Jinju, 660-701, Fr.
SOURCE: Han'guk Susan Hakhoechi (1993), 26(2), 91-101
CODEN: HSHKAW; ISSN: 0374-8111
DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB To investigate the effects of supplemental carotenoids on pigmentation and carotenoid metabolism in red sea bream (Pagrus major) and flounder (Paralichthys olivaceus), fish were given diets containing β-carotene, lutein ester, astaxanthin, astaxanthin monoester, astaxanthin diester, and β-apo-8'-carotenal for 8 wks. Supplementation of cultured red sea bream with carotenoids increased carotenoid deposition and fish pigmentation in the following order: astaxanthin diester, β-apo-8'-carotenal, and astaxanthin monoester. The main carotenoids of red sea bream were astaxanthin diester, tunaxanthin, and

β-carotene. A differences in the content of astaxanthin diester and β-carotene was observed in wild and cultured red sea bream. In cultured flounder supplemented with carotenoids, carotenoid deposition and pigmentation increased in the order: β-carotene group and lutein ester group. The main carotenoids of flounder were zeaxanthin and lutein. Differences in lutein and β-carotene contents were observed in wild and cultured flounder. Based on the level and composition of carotenoids in each group after feeding the exptl. diets, carotenoids in red sea bream were metabolized in the reductive pathway, astaxanthin to tunaxanthin, and likewise, in flounder, lutein to tunaxanthin.

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L7 ANSWER 24 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:666974 CAPLUS
DOCUMENT NUMBER: 119:266974
ORIGINAL REFERENCE NO.: 119:47673a,47676a
TITLE: Analysis of carotenoids in grass prawn heads by high performance liquid chromatography
AUTHOR(S): Wu, Pai Wen; Hwang, Lucy Sun
CORPORATE SOURCE: Dep. Health, Exec. Yuan, Taipei, Taiwan
SOURCE: Yaowu Shipin Fenxi (1993), 1(2), 175-82
CODEN: YSFEEP; ISSN: 1021-9498
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The carotenoid composition in grass prawn (Penaeus monodon) heads was studied to obtain information for any future application of the natural colorants from grass prawn heads. The red oily pigment in grass prawn heads was extracted with acetone, followed by petroleum ether (b.p. 30-50°) which was dissolved in acetone and stored overnight at -10°. Next, the crude pigment was obtained by removal of ppts. from the cold acetone. The crude pigment was analyzed by HPLC with Sumipax OA-2000 column and n-hexane/dichloromethane/ethanol (120:17:1, volume/volume/volume) as a mobile phase. Flow rate was set at 1.5 mL/min and the detector was set at 470 nm. The main carotenoids in the grass prawn heads are astaxanthin , astaxanthin monoester, astaxanthin diester, and some unidentified pigments. The relative amts. of these pigments are 36.1%, 31.5%, 17.5%, and 14.9%, resp. The astaxanthin fraction was separated into its three optical isomers: (3R, 3'R)-astaxanthin, (3R,3'S)-astaxanthin, and (3S, 3'S)-astaxanthin. The relative amts. are 15%, 43.7%, and 41.3%, resp., as determined by HPLC.

L7 ANSWER 25 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:253857 CAPLUS
DOCUMENT NUMBER: 118:253857
ORIGINAL REFERENCE NO.: 118:44091a,44094a
TITLE: Research note: carotenoids in combs of capercaillie (Tetrao urogallus) fed defined diets
AUTHOR(S): Egeland, E. S.; Parker, H.; Liaaen-Jensen, S.
CORPORATE SOURCE: Norwegian Inst. Technol., Univ. Trondheim, Trondheim, N-7034, Norway
SOURCE: Poultry Science (1993), 72(4), 747-51
CODEN: POSCAL; ISSN: 0032-5791
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The carotenoids in the supraocular combs of male capercaillie offered 2 different, specified diets were examined quant. and qual. Birds offered the diet richest in carotenoids (zeaxanthin and lutein) experienced the highest carotenoid concns. (36 μg per bird). (3S,3'S)-Astaxanthin diester, accompanied by lesser amts. of its monoester and the free diol, were the major carotenoids, compatible with a metabolic conversion of (3R,3'R)-zeaxanthin by the birds.

L7 ANSWER 26 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1991:203968 CAPLUS
DOCUMENT NUMBER: 114:203968
ORIGINAL REFERENCE NO.: 114:34317a,34320a
TITLE: The carotenoids of wild and blue disease affected farmed tiger shrimp (Penaeus monodon, Fabricus)
AUTHOR(S): Howell, Belinda K.; Matthews, Anthony D.
CORPORATE SOURCE: Biocompatibles Ltd., Uxbridge/Middlesex, UB8 3PQ, UK
SOURCE: Comparative Biochemistry and Physiology, Part B: Biochemistry & Molecular Biology (1991), 98B(2-3), 375-9
CODEN: CBPBB8; ISSN: 0305-0491
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The main carotenoids in wild P. monodon exoskeleton were astaxanthin di- and monoesters, astaxanthin, and β-carotene. Wild P. monodon exoskeleton contained on average 26.3 ppm total carotenoid; normally pigmented farmed shrimp had a similar concentration (25.3 ppm). Exoskeletons of farmed blue P. monodon (i.e., blue-colored, as opposed to the normally red-blue/black banded shrimp) contained significantly less total carotenoid (4.3-7 ppm). The only major carotenoid was astaxanthin. Com. available diets contained only trace quantities of canthaxanthin. Nutritional deficiency with respect to carotenoids is suggested as the cause of blue disease in farmed P. monodon.

L7 ANSWER 27 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1990:589975 CAPLUS
DOCUMENT NUMBER: 113:189975
ORIGINAL REFERENCE NO.: 113:32146h,32147a
TITLE: Extraction and stability of carotenoprotein from krill processing waste recovered by using proteolytic enzymes
AUTHOR(S): Kim, Se Kwon; Kim, Yong Tae; Kwak, Dong Chae; Cho, Duck Jae; Lee, Eung Ho
CORPORATE SOURCE: Dep. Appl. Chem., Natl. Fish. Univ., Pusan, 608-737, S. Korea
SOURCE: Han'guk Susan Hakhoechi (1990), 23(1), 40-50
CODEN: HSHKAW; ISSN: 0374-8111
DOCUMENT TYPE: Journal
LANGUAGE: Korean
AB A food colorant was isolated from krill (Euphausia superba) processing wastes. Carotenoproteins were extracted from preboiled krill processing offal (PKPO) and raw frozen krill processing offal (RKPO) by using proteolytic enzymes. Total astaxanthin content of PKPO and RKPO were 35.1 and 22.1 mg% and amts. in carotenoproteins were 98.6 and 61.9 mg%, resp. The chitin contents of PKPO and RKPO were 6.9 and 4.5%, resp. When 0.5% trypsin was added to the extraction medium containing 0.5M Na3EDTA at 4°,

74% of the astaxanthin and 83% of the protein of PKPO was recovered as carotenoprotein in 24 h. The amino acid profile of the carotenoprotein was mainly composed of glutamic acid, methionine, aspartic acid and isoleucine. These compds. amounted to .apprx.40% of the total amino acids, followed by alanine, phenylalanine, lysine, leucine, threonine and tyrosine (in that order), with a small amount of cysteine and tryptophan. The levels of essential amino acids were high (38.3%-43.6% of the total amino acids). The maximum absorbance of the carotenoid fraction from krill processing offal and from the carotenoprotein was at 469 nm in petroleum ether. The carotenoids included astaxanthin, astaxanthin monoester, and asthaxanthin diester (25-30, 35-40, and 40-45%, resp.). Loss of carotenoids in the carotenoprotein can be prevented by the addition of a protease inhibitor (trasylol) and an antioxidant (BHT) below 4°.

L7 ANSWER 28 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:571424 CAPLUS
DOCUMENT NUMBER: 111:171424
ORIGINAL REFERENCE NO.: 111:28489a,28492a
TITLE: Variations of the composition of zeaxanthin and astaxanthin fatty acid monoesters in the ovary and hepatopancreas of Penaeus schmitti during ovogenesis
AUTHOR(S): Vincent, M.; Ramos, L.; Oliva, M.
CORPORATE SOURCE: Lab. Biochim. Ecol. Invertebr. Mar., EPHE, Marseille, F13007, Fr.
SOURCE: Archives Internationales de Physiologie et de Biochimie (1989), 97(1), 71-8
CODEN: AIPBAY; ISSN: 0003-9799
DOCUMENT TYPE: Journal
LANGUAGE: French
AB The carotenoid esters of the shrimp P. schmitti were investigated by TLC and absorption spectrophotometry. Astaxanthin monoester and zeaxanthin monoester were identified in the hepatopancreas and ovaries during ovarian development. The nature of the fatty acids derived from these natural esters was determined quant. by gas chromatog. of their Me esters. The variations of linkage between the fatty acids and carotenoids during ovogenesis were also measured. The role of zeaxanthin monoester in carotenoid transfer from the hepatopancreas to the ovaries during ovarian development and the relations between lipid and carotenoid metabolism are discussed.

L7 ANSWER 29 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:494196 CAPLUS
DOCUMENT NUMBER: 111:94196
ORIGINAL REFERENCE NO.: 111:15792h,15793a
TITLE: Qualitative and quantitative variations of carotenoid pigments in the ovary and hepatopancreas of Penaeus schmitti during ovarian maturation.
AUTHOR(S): Vincent, M.; Ramos, L.; Oliva, L.
CORPORATE SOURCE: Lab. Biochim. Ecol. Invertebres Mar., Cent. Oceanol. Marseille, Marseille, Fr.
SOURCE: Archives Internationales de Physiologie et de Biochimie (1988), 96(5), 155-64
CODEN: AIPBAY; ISSN: 0003-9799
DOCUMENT TYPE: Journal
LANGUAGE: French

AB Carotenoid pigments were identified in the ovary and hepatopancreas of the shrimp P. schmitti, and their individual variations were determined during ovarian maturation. The β-carotene + echinenone concentration in the ovary increased only slightly during ovarian maturation from 43.10 μg/g at gonadosomatic index (GSI) 1.05 to 76.5 μg/g at GSI 7.1), whereas their percentage of total carotenoids decreased significantly (from 21% at GSI 1.05 to 5% at GSI 3.5). The zeaxanthin monoester concentration in the ovary increased in 3 phases: (1) at GSI 1.05-2.3 the concentration remained .apprx.72.5 μg/g; (2) at GSI 2.3-3.5 there was a very marked increase, to reach 217.4 μg/g; and (3) at GSI >3.5 the concentration was stabilized .apprx.240 μg/g. The percentage of zeaxanthin monoester decreased markedly and continuously (from 36% at GSI 1.05 to 17% at GSI 7.1). Quant. the concns. of total astaxanthin, free astaxanthin, and astaxanthin monoester in the ovary varied similarly, with constant values being maintained at GSI 1.05-2.3 followed by a marked increase until the end of ovarian maturation (resp. values at GSI 7.1 were 1196, 705.2, and 491 μg/g). The percentages of these 3 carotenoids with respect to total carotenoids varied similarly to the quant. data, reaching 78, 46, and 32%, resp., at the end of ovarian maturation. In the hepatopancreas, β-carotene was only present at GSI <2.65, increasing from 217.3 μg (21% of total carotenoids) at the beginning of ovarian maturation to a peak (385 μg/g, 31%) at GSI 1.2. Astaxanthin was also only present in the hepatopancreas at the beginning of ovarian maturation (108 μg/g, 10.6% of total carotenoids) and rapidly disappeared. Canthaxanthin was a major carotenoid in the hepatopancreas, representing 35% at the beginning of maturation, reaching a maximum (38.6%, 477 μg/g) at GSI 1.2, and then decreasing to a stable value (7.7%, 104 μg/g) at GSI 3. In the hepatopancreas total zeaxanthin increased from 33% at the beginning of maturation to 93.8% at GSI 2.6 and thereafter remained at 92.4% of total carotenoids, whereas free zeaxanthin represented 19.7% of the total carotenoids at the beginning of maturation and remained at .apprx.14% throughout the rest of maturation. The zeaxanthin monoester concentration of the hepatopancreas was 135.7 μg/g (13.3% of total carotenoids) at the beginning of ovarian maturation, peaked at 1640 μg/g (81.3%), and then stabilized at a slightly lower value. The transfer of carotenoids from the hepatopancreas to the ovary during sexual maturation in the shrimp was discussed.

L7 ANSWER 30 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:475046 CAPLUS
DOCUMENT NUMBER: 111:75046
ORIGINAL REFERENCE NO.: 111:12591a,12594a
TITLE: Carotenoids of the Arctic charr, Salvelinus alpinus (L.)
AUTHOR(S): Scalia, S.; Isaksen, M.; Francis, G. W.
CORPORATE SOURCE: Dep. Chem., Univ. Bergen, Bergen, 5007, Norway
SOURCE: Journal of Fish Biology (1989), 34(6), 969-70
CODEN: JFIBA9; ISSN: 0022-1112
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The muscle of the Arctic charr (S. alpinus), which looks redder than that of the more familiar salmonids, contained high levels of carotenoids (8.6 μg/g wet weight), due exclusively to free astaxanthin. The total carotenoid levels for the red ventral skin and red pectoral fins were 37.3 μg/g and 61.5 μg/g, resp. Whereas the skin contained perdominantly astaxanthin monoester and diester with

smaller amts. of free astaxanthin, the pectoral fins contained these carotenoids as well as canthaxanthin and an unidentified pigment. This investigation provides a basis for the application of carotenoid anal. in the study of the ecol. and genetics of the Arctic charr.

L7 ANSWER 31 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1988:73961 CAPLUS
DOCUMENT NUMBER: 108:73961
ORIGINAL REFERENCE NO.: 108:12231a,12234a
TITLE: Chemistry and utilization of plankton-XI. Thermal decomposition of krill carotenoids with special reference to supercritical carbon dioxide extraction
AUTHOR(S): Yamaguchi, Katsumi; Mori, Tetsu; Murakami, Masahiro; Konosu, Shoji; Kajiyama, Tetsuo; Yamamoto, Hiroshi
CORPORATE SOURCE: Fac. Agric., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Nippon Suisan Gakkaishi (1987), 53(12), 2279 CODEN: NSUGAF; ISSN: 0021-5392
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Decomposition of carotenoids in the extraction of ground freeze-dried Euphausia superba with supercrit. CO2 at 250 kg/cm2 and 80° for 6 h was caused by the temperature and not the pressure or gas composition, as shown by holding in N at the same pressure and temperature or in air at 80°. Carotenoid losses were >50%, and stability decreased in the order: astaxanthin diesters, astaxanthin monoesters, and astaxanthin isomers.

L7 ANSWER 32 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1987:64546 CAPLUS
DOCUMENT NUMBER: 106:64546
ORIGINAL REFERENCE NO.: 106:10575a,10578a
TITLE: The carotenoids of eggs of wild and farmed Atlantic salmon, and their changes during development to the start of feeding
AUTHOR(S): Craik, J. C. A.; Harvey, S. M.
CORPORATE SOURCE: Dunstaffnage Mar. Res. Lab., Scott. Mar. Biol. Assoc., Argyll, PA34 4AD, UK
SOURCE: Journal of Fish Biology (1986), 29(5), 549-65 CODEN: JFIBA9; ISSN: 0022-1112
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The only carotenoid detected in newly fertilized eggs of wild Atlantic salmon, Salmo salar, from western Scotland was astaxanthin at a concentration of 6.2, 6.4, and 7.6 μg/g wet weight in 1982, 1983, and 1984, resp.
In eggs of farmed Atlantic salmon the only carotenoid detected was canthaxanthin at concns. which varied significantly among farms depending on the level of synthetic canthaxanthin in the broodstock diet. Thus, on 2 farms with feed containing 50 μg/g, the levels were 11.8 μg/g and 12.3 μg/g, whereas on 2 farms with 75 μg/g the levels were 18.7 μg/g and 21.2, μg/g. The levels in eggs of 1 seawinter fish (grilse) did not differ from those of 2-seawinter fish reared on the same farm and diet. During development from newly fertilized egg to fry at the end of the yolk sac absorption, the quantity of carotenoid present per individual decreased, presumably as a result of metabolism Despite large differences in quantity present, the quantity so metabolized was fairly constant at 2-4 μg carotenoid/g original egg weight for eggs from 2-seawinter farmed and

wild salmon, except that in eggs from farmed grilse it was 7 μg/g. In fry from wild eggs, 99% of the remaining carotenoid was present in the integument (skin and fins as astaxanthin, astaxanthin monoester, and astaxanthin diester. In fry from farmed salmon eggs, 47% of the carotenoid present was found in the unused yolk oil droplets and in the liver, and 37% was found in the integument as canthaxanthin and on unidentified metabolite of canthaxanthin. These findings explain visible color differences between fry from wild parents and fry from canthaxanthin-fed farmed parents, particularly in the fins, liver, and residual oil droplets. The canthaxanthin metabolite was also found, together with canthaxanthin, in the skin of farmed adults fed canthaxanthin. Preliminary tests showed it to be unchanged by saponification but

reduced by NaBH4. For eggs from the 3 farms incubated under the same conditions in the same season, the percentage mortality both to the eyed stage and between hatching and 1st feeding varied significantly among farms, but the percentage mortality between the eyed stage and hatching did not do so. Results combined from 2 seasons for eggs from 3 farms and 1 wild source showed that egg mortality between fertilization and the eyed stage was not significantly different between wild and farmed salmon, but mortality between the eyed stage and hatching and between hatching and 1st feeding were both significantly higher in farmed salmon that in wild salmon. Such differences could not be explained simply by the large differences in egg carotenoid content, but were almost certainly due to factors such as broodstock nutrition, broodstock management, and stripping and fertilization procedures.

L7 ANSWER 33 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:	1986:17839 CAPLUS
DOCUMENT NUMBER:	104:17839
ORIGINAL REFERENCE NO.:	104:2977a,2980a
TITLE:	Stereochemical investigation of carotenoids in the antarctic krill Euphausia superba
AUTHOR(S):	Maoka, Takashi; Katsuyama, Masaaki; Kaneko, Nobuyuki; Matsuno, Takao
CORPORATE SOURCE:	Dep. Nat. Prod. Res., Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE:	Nippon Suisan Gakkaishi (1985), 51(10), 1671-3 CODEN: NSUGAF; ISSN: 0021-5392
DOCUMENT TYPE:	Journal
LANGUAGE:	English
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The total amts. of carotenoids in the carapace, flesh, and eyes of antarctic krill (E. superba) were 1.13, 1.06, and 90.82 mg/100 g, resp. Astaxanthin diester (55-64%), astaxanthin monoester (25-35%), astaxanthin (7-8%), and unknown carotenoids (3-4%) were isolated. The 3 stereoisomers. Each astaxanthin fraction consisted of (3R,3'R)-astaxanthin (62-71%) as the major component along with (3R,3'S)-astaxanthin (11-14%) and (3S,3'S)-astaxanthin (16-26%).

L7 ANSWER 34 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1984:173333 CAPLUS
DOCUMENT NUMBER: 100:173333
ORIGINAL REFERENCE NO.: 100:26353a,26356a
TITLE: Utilization of salted antarctic krill (Euphausia superba). IV. Astaxanthin
AUTHOR(S): Kawabata, Makoto; Taguchi, Kuniko; Ohtsuki, Kozo
CORPORATE SOURCE: Fac. Home Econ., Kyoto Prefect. Univ., Kyoto, 606, Japan
SOURCE: Kyoto-furitsu Daigaku Gakujutsu Hokoku, Rigaku, Seikatsu Kagaku (1983), (34), 45-50
CODEN: KFDGBB; ISSN: 0368-5314
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Astaxanthin [472-61-7] (5 mg), consisting of 9.6% free form, 24.1% monoester, and 66.2% diester, was isolated from 100 g salted krill by extraction with iso-PrOH. The color of the extract was stable at 7° in the dark. Saponification of the isolate increased the stability of the color, but treatment with SiO2 had no effect on stability.

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L7 ANSWER 34 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1984:173333 CAPLUS
DOCUMENT NUMBER: 100:173333
ORIGINAL REFERENCE NO.: 100:26353a,26356a
TITLE: Utilization of salted antarctic krill (Euphausia superba). IV. Astaxanthin
AUTHOR(S): Kawabata, Makoto; Taguchi, Kuniko; Ohtsuki, Kozo
CORPORATE SOURCE: Fac. Home Econ., Kyoto Prefect. Univ., Kyoto, 606, Japan
SOURCE: Kyoto-furitsu Daigaku Gakujutsu Hokoku, Rigaku, Seikatsu Kagaku (1983), (34), 45-50
CODEN: KFDGBB; ISSN: 0368-5314
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Astaxanthin [472-61-7] (5 mg), consisting of 9.6% free form, 24.1% monoester, and 66.2% diester, was isolated from 100 g salted krill by extraction with iso-PrOH. The color of the extract was stable at 7° in the dark. Saponification of the isolate increased the stability of the color, but treatment with SiO2 had no effect on stability.

L7 ANSWER 35 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1984:137870 CAPLUS
DOCUMENT NUMBER: 100:137870
ORIGINAL REFERENCE NO.: 100:21020h,21021a
TITLE: Chemistry and utilization of plankton. IV. Pigmentation of cultured red sea bream with astaxanthin diester purified from krill oil
AUTHOR(S): Fujita, Takao; Satake, Mikio; Watanabe, Takeshi; Kitajima, Chikara; Miki, Wataru; Yamaguchi, Katsumi; Konosu, Shoji
CORPORATE SOURCE: Cent. Res. Lab., Nippon Suisan Kaisha, Ltd., Hachioji, 192, Japan

SOURCE: Nippon Suisan Gakkaishi (1983), 49(12), 1855-61
CODEN: NSUGAF; ISSN: 0021-5392
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Astaxanthin diester (I) purified from krill oil was added to a formulated feed for red sea bream, Pagrus major, at concns. of 0.12-12.8 mg astaxanthin/100 g diet and the feeding experiment was conducted for 8 wk. I was very effective, being superior to frozen krill and krill oil. The anal. of the integuments of the pigmented fish showed that carotenoid contents were 0.46-1.72 mg/100 g and that the composition in fish receiving I at a level of 12.8 mg astaxanthin/100 g diet was I (53%), astaxanthin monoester (4%), and esterified yellow carotenoids such as tunaxanthin [12738-95-3] (22%), 3'-epilutein [52842-48-5] (9%), lutein [127-40-2] (trace), zeaxanthin [144-68-3] (5%), diatoxanthin [31063-73-7] + cynthiaxanthin [28380-31-6] (2%), and β-carotene triol [72001-59-3] (4%). This indicates that part of the I ingested by red sea bream should have been metabolized to tunaxanthin via β-carotene triol, zeaxanthin, and 3'-epilutein.

L7 ANSWER 36 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1984:48943 CAPLUS
DOCUMENT NUMBER: 100:48943
ORIGINAL REFERENCE NO.: 100:7455a,7458a
TITLE: Chemistry and utilization of plankton. III. Pigmentation of cultured yellowtail with krill oil
AUTHOR(S): Fujita, Takao; Satake, Mikio; Hikichi, Shozo; Takeda, Masahiko; Shimeno, Sadao; Kuwabara, Hidetoshi; Miki, Wataru; Yamaguchi, Katsumi; Konosu, Shoji
CORPORATE SOURCE: Cent. Res. Lab., Nippon Suisan Kaisha, Ltd., Hachioji, 192, Japan
SOURCE: Nippon Suisan Gakkaishi (1983), 49(10), 1595-600
CODEN: NSUGAF; ISSN: 0021-5392
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The sole feeding of a formulated feed to yellowtail, Seriola quinqueradiata, induces poor dark grey color at the back and sides, unlike the natural one of iridescent blue-green. The characteristic yellow band near the lateral line does not appear either. These color changes, however, were improved by annexing to the formulated feed ≤2% of an oil extracted from meal of the Antarctic krill, Euphausia superba. The krill oil contained 108 mg of carotenoids/100 g, which were composed of astaxanthin diester and astaxanthin monoester (71% and 20%, resp.). Integuments of pigmented yellowtails had carotenoid contents of 0.64-1.21 mg/100 g consisting of tunaxanthin, 3'-epilutein, zeaxanthin, β-carotenetriol, diatoxanthin, cynthiaxanthin, and lutein (43-53%, 17-28%, 9-15%, 7-11%, 3-9%, <5%, and traces, resp.). Evidently the fish metabolized astaxanthin to tunaxanthin.

L7 ANSWER 37 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1983:611328 CAPLUS
DOCUMENT NUMBER: 99:211328
ORIGINAL REFERENCE NO.: 99:32505a,32508a
TITLE: Chemistry and utilization of plankton. II. The stability of carotenoid pigments in the antarctic krill Euphausia superba
AUTHOR(S): Miki, Wataru; Toriu, Naomi; Kondo, Yoshihiko; Murakami, Masahiro; Yamaguchi, Katsumi; Konosu, Shoji;

Satake, Mikio; Fujita, Takao
CORPORATE SOURCE: Fac. Agric., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Nippon Suisan Gakkaishi (1983), 49(9), 1417-20
CODEN: NSUGAF; ISSN: 0021-5392
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The stability to heat and solvent of carotenoids in Antarctic krill was examined When homogenates of the frozen krill were heated at 100°, little change was noticed up to 1 h in the content and composition of the carotenoids. After 3 h of heating, however, the content decreased to less than half and the composition changed to 78% of astaxanthin diester (I) and 21% of astaxanthin monoester (II), with almost complete disappearance of astaxanthin (III) and unidentified carotenoids. Purified I, II, and III were stored in C6H6, hexane, Me2CO, and EtOH in darkness, at 15°, 0°, and -20° up to 2 wk and analyzed for the retained carotenoid. In C6H6 and hexane, I was the most stable without noticeable decomposition II showed less stability and III was rather unstable, especially in hexane above 0°. In Me2CO and EtOH, even I was considerably decomposed at 15°. I was the most stable to heat and solvents.

L7 ANSWER 38 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1983:611327 CAPLUS
DOCUMENT NUMBER: 99:211327
ORIGINAL REFERENCE NO.: 99:32505a,32508a
TITLE: Chemistry and utilization of plankton. I. The composition of carotenoid pigments in the antarctic krill Euphausia superba
AUTHOR(S): Yamaguchi, Katsumi; Miki, Wataru; Toriu, Naomi; Kondo, Yoshihiko; Murakami, Masahiro; Konosu, Shoji; Satake, Mikio; Fujita, Takao
CORPORATE SOURCE: Fac. Agric., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Nippon Suisan Gakkaishi (1983), 49(9), 1411-15
CODEN: NSUGAF; ISSN: 0021-5392
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The content of carotenoids in frozen krill was 3-4 mg/100 g. The carotenoids comprised astaxanthin diester (I), astaxanthin monoester (II), astaxanthin (III) [472-61-7], and unidentified carotenoids (IV) at 40-50%, 30-40%, 15-25%, and 5-15%, resp. In the case of krill meal, the content was 15-20 mg/100 g and the composition of I, II, and IV was 65-75%, 15-25%, and 5-15%, resp. with no III. Two kinds of unique colored carotenoids of dense crimson and of violet occupied the major part of IV. Both were probably esters of retro carotenoids.

L7 ANSWER 39 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1983:214576 CAPLUS
DOCUMENT NUMBER: 98:214576
ORIGINAL REFERENCE NO.: 98:32607a,32610a
TITLE: Utilization of shrimp meal for rainbow trout (Salmo gairdneri Rich.) pigmentation. Influence of fat content of the diet
AUTHOR(S): Choubert, Georges, Jr.; Luquet, Pierre
CORPORATE SOURCE: Cent. Rech. Hydrobiol., INRA, Ascain, 64310, Fr.
SOURCE: Aquaculture (1983), 32(1-2), 19-26
CODEN: AQCLAL; ISSN: 0044-8486

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Norwegian shrimp meal contains astaxanthin [472-61-7] (diester 88%, monoester 12%). The total content of the pigments amts. to 25.2 mg/kg dry meal. Incorporation of this shrimp meal at 30% in rainbow trout diets with 3 different fat levels (9.4, 12.08, 17.4%) causes a reddish pigmentation of the skin and muscle. In the skin, astaxanthin was found in diester form, whereas this pigment was in free form in the muscle. An increased lipid content in the diet does not seem to enhance deposition of carotenoids in the fish. Although the increase in carotenoid percentage in trout skin and muscle is important (1 mg/fish), it is relatively small compared to the large amount of pigment (25 mg/kg) contained in shrimp meal. The low fixation of carotenoids by trout is due to the poor digestibility of pigments. Since nearly 90% of the ingested pigments are found in feces, this implies that the main obstacle to carotenoids fixation is of digestive origin.

L7 ANSWER 40 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1982:196754 CAPLUS
DOCUMENT NUMBER: 96:196754
ORIGINAL REFERENCE NO.: 96:32413a,32416a
TITLE: Comparison of carotenoids in the ovaries of marine fish and shellfish
AUTHOR(S): Miki, W.; Yamaguchi, K.; Konosu, S.
CORPORATE SOURCE: Lab. Mar. Biochem., Univ. Tokyo, Tokyo, Japan
SOURCE: Comparative Biochemistry and Physiology, Part B: Biochemistry & Molecular Biology (1982), 71B(1), 7-11
CODEN: CBPBB8; ISSN: 0305-0491
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The following carotenoids were isolated and identified: astaxanthin diester, tunaxanthin monoester, astaxanthin monoester, tunaxanthin, astaxanthin , doradexanthin, lutein, zeaxanthin, idoxanthin, triol, and tetrol from 9 species of fish; astaxanthin diester, astaxanthin monoester, astaxanthin, doradexanthin, zeaxanthin, idoxanthin, and tetrol from 4 species of crustaceans; astaxanthin , pectenolone, pectenoxanthin, pectenol, and tetrol from 4 species of scallop. Tunaxanthin monoester and astaxanthin diester were major carotenoids in skipjack and Pacific cod, resp. The concentration of carotenoids ranged 0.065-1.95, 1.30-5.91, and 1.56-7.15 mg/100 g ovary for fish, crustaceans, and scallops, resp. The species and tissue specificity of ovarian carotenoids and their possible role are discussed.

L7 ANSWER 41 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1982:100934 CAPLUS
DOCUMENT NUMBER: 96:100934
ORIGINAL REFERENCE NO.: 96:16536h,16537a
TITLE: Esterified, optically pure (3S,3'S)-astaxanthin from flowers of Adonis annua
AUTHOR(S): Renstroem, Britta; Berger, Hanni; Liaaen-Jensen, Synnoeve
CORPORATE SOURCE: Norw. Inst. Technol., Univ. Trondheim, Trondheim, N-7034, Norway
SOURCE: Biochemical Systematics and Ecology (1981), 9(4), 249-50

CODEN: BSECBU; ISSN: 0305-1978
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The quant. carotenoid composition of the red flower petals of A. annua is reported. Optically pure (3S,3'S)-astaxanthin occurs both as a diester (64% of total carotenoid) and as a monoester (11%). The optical purity was determined by hydrolysis of the natural esters in the absence of O and subsequent HPLC anal. of a parent α-ketol esterified with (-)-camphanic acid. All non-animal sources hitherto examined synthesize pure 3S,3'S- or 3R,3'R-isomers of astaxanthin, whereas marine animal sources contain mixture of all 3 optical isomers, including the meso form.

L7 ANSWER 42 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1982:33841 CAPLUS
DOCUMENT NUMBER: 96:33841
ORIGINAL REFERENCE NO.: 96:5593a,5596a
TITLE: Ensiling in acid - a method to stabilize astaxanthin in shrimp processing by-products and improve uptake of this pigment by rainbow trout (Salmo gairdneri)
AUTHOR(S): Torrissen, O.; Tidemann, E.; Hansen, F.; Raa, J.
CORPORATE SOURCE: Inst. Mar. Res., Matre Aquacult. Stn., Matredal, Norway
SOURCE: Aquaculture (1981), 26(1-2), 77-83
CODEN: AQCLAL; ISSN: 0044-8486
DOCUMENT TYPE: Journal
LANGUAGE: English
AB astaxanthin [472-61-7] Is stable in an acid silage of shrimp processing waste, except for a slow conversion of its diester to the corresponding monoester. The digestion by rainbow trout of the astaxanthin present in this waste material was improved by ensiling, to .apprx.71% as compared to 45% in the corresponding fresh or dried material. Also the rate of accumulation of the pigment in the fish muscle was markedly higher in fish fed the silage diet than those given fresh or dried shrimp waste.

L7 ANSWER 43 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1980:93157 CAPLUS
DOCUMENT NUMBER: 92:93157
ORIGINAL REFERENCE NO.: 92:15227a,15230a
TITLE: The utilization of astaxanthin-forms by rainbow trout (Salmo gairdneri)
AUTHOR(S): Torrissen, O.; Braekkan, O. R.
CORPORATE SOURCE: Fish. Coll. Norway, Univ. Bergen, Bergen, Norway
SOURCE: Finfish Nutr. Fishfeed Technol., Proc. World Symp. (1979), Meeting Date 1978, Volume 2, 377-82. Editor(s): Halver, John E.; Tiews, Klaus. Heenemann Verlagsgesellschaft mbH: Berlin, Fed. Rep. Ger.
CODEN: 42MUAI
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Astaxanthin [472-61-7] was isolated from lipid exts. of raw calanus (Calanus finmarchicus) as the diester, monoester, and free forms by column chromatog. The different forms were dissolved in a marine oil and mixed in moist pellets fed to rainbow trout (S. gairdneri). Samples were taken at 19 and 53 days and analyzed for muscle pigmentation. The results showed the best pigment retention in the group fed free

astaxanthin, and the lowest values were obtained in the groups with astaxanthin diester.

L7 ANSWER 44 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1977:154135 CAPLUS
DOCUMENT NUMBER: 86:154135
ORIGINAL REFERENCE NO.: 86:24199a,24202a
TITLE: Studies on the Antarctic krill, Euphausia superba. IV. Carotenoids
AUTHOR(S): Mori, Mikio; Yasuda, Shinichi; Nagahisa, Eizo
CORPORATE SOURCE: Cent. Res. Lab., Nippon Suisan Co., Ltd., Tokyo, Japan
SOURCE: Nippon Suisan Kabushiki Kaisha Chuo Kenkyusho Hokoku (1976), 11, 18-27
CODEN: NSKHA2; ISSN: 0369-5735
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Carotenoid contents were 3.1-4.7 mg/100 g on a wet weight basis and 15.2-26.7 mg/100 g on a dry weight basis. About half of the carotenoid content was in the contents of the cephalothorax and the abdomen, and the rest was distributed almost equally between the exoskeleton and the eyes. The content in the eyes was as high as 96 mg/100 g. The carotenoids were .apprx.60% astaxanthin diester, .apprx.20% of astaxanthin monoester, and .apprx.10% astaxanthin [472-61-7]. The content and composition of carotenoids did not change during boiling in 3% NaCl up to 30 min or by steaming for 5 min. During storage of the dried krill and krill meal, carotenoids decreased without formation of astacene.

L7 ANSWER 45 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1976:476617 CAPLUS
DOCUMENT NUMBER: 85:76617
ORIGINAL REFERENCE NO.: 85:12331a,12334a
TITLE: Nature of the carotenoids contained in the skin and muscle of rainbow trout having ingested Capelin red oil
AUTHOR(S): Choubert, G., Jr.; Luquet, P.
CORPORATE SOURCE: Cent. Natl. Rech. Zootech., Inst. Natl. Rech. Agron., Jouy-en-Josas, Fr.
SOURCE: Annales d'Hydrobiologie (1975), 6(2), 123-30
CODEN: AHYBB5; ISSN: 0365-2947
DOCUMENT TYPE: Journal
LANGUAGE: French
GI For diagram(s), see printed CA Issue.
AB Muscle of rainbow trout fed up to 17.8% capelin (Mallotus villosus) oil contained only astaxanthin (I) [472-61-7], while the skin contained β-carotene (II) [7235-40-7], echinenone (III) [432-68-8], and astaxanthin monoester. Capelin oil contained 50 mg of carotenoids/kg, of which 5.51% was II and 49.94, 28.04, and 16.49 % was I monoester, I diester, and free I, resp. III either was present in the oil in unmeasurable amts. and accumulated in the skin or was formed from II in vivo.

L7 ANSWER 46 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1976:14872 CAPLUS
DOCUMENT NUMBER: 84:14872
ORIGINAL REFERENCE NO.: 84:2455a,2458a
TITLE: Carotenoprotein and carotenoids of some micronektonic

crustaceans caught in Sagami and Suruga bays
AUTHOR(S): Nakagawa, Heisuke; Kayama, Mitsu
CORPORATE SOURCE: Fac. Fish. Anim. Husb., Hiroshima Univ., Fukuyama, Japan
SOURCE: Hiroshima Daigaku Suichikusangakubu Kiyo (1975), 14(1), 49-60
CODEN: HIDGAW; ISSN: 0440-8756
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Canthaxanthin, β-carotene, phoenicoxanthin, monohydroxy monoketo β-carotene ester, β-doradexanthin monoester, and echinenone were detected in addition to astaxanthin and its esters by thin layer chromatog. in Acanthephyra quadrispinosa, Sergestes prehensilis, S. lucens, Lucifer species and Euphausia similis found in Suruga and Sagami bays at the depth of .apprx.2000 m, a feebly lighted environment. Species differences were marked. The presence of isocarotene, esterified eschscholtzanthin, isocryptoxanthin, and cryptoxanthin was also suggested. Only a small amount of pigment protein containing astaxanthin and 5 unknown pigments was detected in exoskeletons of A. quadrispinosa and S. prehensilis by disc electrophoresis, suggesting that protein has no role in the color of the animals.

L7 ANSWER 47 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1975:473988 CAPLUS
DOCUMENT NUMBER: 83:73988
ORIGINAL REFERENCE NO.: 83:11649a,11652a
TITLE: Animal carotenoids. 10. Chirality of astaxanthin of different biosynthetic origin
AUTHOR(S): Veerman, A.; Borch, G.; Pedersen, R.; Liaaen-Jensen, S.
CORPORATE SOURCE: Lab. Exp. Entomol., Univ. Amsterdam, Amsterdam, Neth.
SOURCE: Acta Chemica Scandinavica, Series B: Organic Chemistry and Biochemistry (1975), B29(4), 525
CODEN: ACBOCV; ISSN: 0302-4369
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The chirality of astaxanthin (I) of the spider mite Schizonobia sycophanta was examined by CD and compared to that of lobster. The CD spectrum of Schizonobia I diester in diethyl ether-isopentane-EtOH (5:5:2) was in the 230-40 nm region, consistent with that of I monoester of lobster. Thus, I of the spider mite, like that of lobster, demonstrates 3S, 3'S chirality. General biosynthetic routes may exist for these carotenoids.

L7 ANSWER 48 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1971:416082 CAPLUS
DOCUMENT NUMBER: 75:16082
ORIGINAL REFERENCE NO.: 75:2549a,2552a
TITLE: Fatty acids of secondary carotenoid esters from Ankistrodesmus braunii (Chlorophyta, Chlorococcales)
AUTHOR(S): Czygan, Franz C.; Eichenberger, Waldemar
CORPORATE SOURCE: Inst. Pharmakonosie Bot. Anst., Univ. Wuezburg, Wuerzburg, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Naturforschung, Teil B: Anorganische Chemie, Organische Chemie, Biochemie, Biophysik, Biologie (1971), 26(3), 264-7

CODEN: ZENBAX; ISSN: 0044-3174
DOCUMENT TYPE: Journal
LANGUAGE: German
AB Three fractions (I, II, and III) of carotenoid esters were isolated from N-deficient cells of the green alga A. braunii. I and II consisted of diesters of astaxanthin with C16 carboxylic acids and C18-carboxylic acids with 2 and 3 double bonds in different combinations. III consisted of monoesters of 3-hydroxy-3',4,4'-trioxo-β-carotene with C18-carboxylic acids with 2 or 3 double bonds. The pattern of fatty acids of the total lipids was quite different from that of the ester fractions I, II, and III. This selective esterification suggested that sp. enzymic reactions occur even in N-deficient algae.

L7 ANSWER 49 OF 49 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1971:136201 CAPLUS
DOCUMENT NUMBER: 74:136201
ORIGINAL REFERENCE NO.: 74:21967a,21970a
TITLE: Method of analysis of astaxanthin and its occurrence in some marine products
AUTHOR(S): Lambertsen, Georg; Braekkan, Olaf R.
CORPORATE SOURCE: Govt. Vitam. Lab., Norw. Fish. Res. Inst., Bergen, Norway
SOURCE: Journal of the Science of Food and Agriculture (1971), 22(2), 99-101
CODEN: JSFAAE; ISSN: 0022-5142
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A method for the determination of astaxanthin in free and esterified forms is based on silica gel chromatog. of a lipid extract to obtain fractions of diester, monoester, and free astaxanthin. The fractions are reduced with borohydride and the tetrahydroxy β-carotene is measured by uv spectrophotometry at 450 and 476 nm. The method has been applied to different crustacean samples and products, to fish oils, and to organs from rainbow trout. Values down to 0.1 μg/g sample could be measured. The fractions were identified by thin-layer chromatog.

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FILE LAST UPDATED: 20 Jul 2008  (20080720/ED)

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     FILE 'CAPLUS' ENTERED AT 11:08:23 ON 21 JUL 2008
L1          3322 S ASTAXANTHIN OR XANTOPHYLL
L2            86 S L1 (L) MONOESTER
L3             1 S L2 (L) (CAPRYLIC OR OCTANOIC)
L4             0 S L2 (L) (CAPRIC OR DECANOIC)
L5             0 S L2 (L) (LAURIC OR DODECANOIC)
L6             0 S L2 (L) (CAPROIC OR HEXANOIC)
L7            49 S L2 NOT HAEMATOCOCCUS

     FILE 'STNGUIDE' ENTERED AT 11:32:02 ON 21 JUL 2008

     FILE 'CAPLUS' ENTERED AT 11:38:01 ON 21 JUL 2008

=> l1 (L) conversion (L) diester (L) monoester
L1 IS NOT A RECOGNIZED COMMAND
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"HELP COMMANDS" at an arrow prompt (=>).

=> s l1 (L) conversion (L) diester (L) monoester
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        508990 CONVERSION
         23834 CONVERSIONS
        523050 CONVERSION
                  (CONVERSION OR CONVERSIONS)
         16442 DIESTER
         13897 DIESTERS
         26054 DIESTER
                  (DIESTER OR DIESTERS)
          7834 MONOESTER
          6587 MONOESTERS
         12560 MONOESTER
                  (MONOESTER OR MONOESTERS)
L8            4 L1 (L) CONVERSION (L) DIESTER (L) MONOESTER

=> d l8 1-4 ibib

L8   ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         2003:865987  CAPLUS
DOCUMENT NUMBER:          140:92641
TITLE:                    Enzymatic enrichment of astaxanthin from Haematococcus
                          pluvialis cell extracts
AUTHOR(S):                Nagao, Toshihiro; Fukami, Tadashi; Horita, Yoshiharu;
                          Komemushi, Sadao; Sugihara, Akio; Shimada, Yuji
CORPORATE SOURCE:         Osaka Municipal Technical Research Institute, Osaka,
                          536-8553, Japan
SOURCE:                   Journal of the American Oil Chemists' Society (2003),
                          80(10), 975-981
                          CODEN: JAOCA7; ISSN: 0003-021X
PUBLISHER:                AOCS Press
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
REFERENCE COUNT:          18    THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS
                                RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8   ANSWER 2 OF 4  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         1995:970228  CAPLUS
DOCUMENT NUMBER:          124:25946
ORIGINAL REFERENCE NO.:   124:4915a,4918a
TITLE:                    Carotenoids in the tiger prawn Penaeus esculentus
                          during ovarian maturation
AUTHOR(S):                Dall, W.; Smith, D. M.; Moore, L. E.
CORPORATE SOURCE:         Division of Fisheries, CSIRO Marine Laboratories,
                          Cleveland, 4163, Australia
SOURCE:                   Marine Biology (Berlin) (1995), 123(3), 435-41
                          CODEN: MBIOAJ; ISSN: 0025-3162
PUBLISHER:                Springer
DOCUMENT TYPE:            Journal
LANGUAGE:                 English

L8   ANSWER 3 OF 4  CAPLUS  COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:         1993:253857  CAPLUS
DOCUMENT NUMBER:          118:253857
ORIGINAL REFERENCE NO.:   118:44091a,44094a
TITLE:                    Research note: carotenoids in combs of capercaillie
                          (Tetrao urogallus) fed defined diets
AUTHOR(S):                Egeland, E. S.; Parker, H.; Liaaen-Jensen, S.
CORPORATE SOURCE:         Norwegian Inst. Technol., Univ. Trondheim, Trondheim,
```

N-7034, Norway
SOURCE: Poultry Science (1993), 72(4), 747-51
CODEN: POSCAL; ISSN: 0032-5791
DOCUMENT TYPE: Journal
LANGUAGE: English

L8 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1982:33841 CAPLUS
DOCUMENT NUMBER: 96:33841
ORIGINAL REFERENCE NO.: 96:5593a,5596a
TITLE: Ensiling in acid - a method to stabilize astaxanthin in shrimp processing by-products and improve uptake of this pigment by rainbow trout (Salmo gairdneri)
AUTHOR(S): Torrissen, O.; Tidemann, E.; Hansen, F.; Raa, J.
CORPORATE SOURCE: Inst. Mar. Res., Matre Aquacult. Stn., Matredal, Norway
SOURCE: Aquaculture (1981), 26(1-2), 77-83
CODEN: AQCLAL; ISSN: 0044-8486
DOCUMENT TYPE: Journal
LANGUAGE: English

=> d l8 1-4 ibib abs

L8 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:865987 CAPLUS
DOCUMENT NUMBER: 140:92641
TITLE: Enzymatic enrichment of astaxanthin from Haematococcus pluvialis cell extracts
AUTHOR(S): Nagao, Toshihiro; Fukami, Tadashi; Horita, Yoshiharu; Komemushi, Sadao; Sugihara, Akio; Shimada, Yuji
CORPORATE SOURCE: Osaka Municipal Technical Research Institute, Osaka, 536-8553, Japan
SOURCE: Journal of the American Oil Chemists' Society (2003), 80(10), 975-981
CODEN: JAOCA7; ISSN: 0003-021X
PUBLISHER: AOCS Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An industrially available preparation of astaxanthin (Ax) from Haematococcus pluvialis contained 41.6 wt% acylglycerols and 24.9 wt% FFA in addition to 14.6 wt% Ax, which was a mixture of free and FA ester forms (free Ax/Ax monoesters/Ax diesters = 4.9:80.3:14.8, by mol). Enrichment of Ax by a two-step process was attempted. The first step was hydrolysis of acylglycerols with Candida rugosa lipase: A mixture of 1.0 kg H. pluvialis cell exts., 1.0 L water, and 50 U/g-reaction mixture of the lipase was agitated at 30°C for 42 h. The degree of hydrolysis of acylglycerols reached 94.4%, but Ax esters were not hydrolyzed. Removal of FFA from the resulting oil layer by mol. distillation enriched the content of Ax esters to 40.8 wt% (named Ax40). The second step was enzymic conversion of Ax esters to free Ax, which successfully proceeded in the presence of ethanol (EtOH). When a mixture of 50.0 g Ax40, 8.2 g EtOH (5 molar equivalent against FA), 58.2 mL water, and 1500 U/g-mixture of Pseudomonas aeruginosa lipase was stirred at 30°C for 68 h, the free Ax content increased to 89.3 mol%. Free Ax was efficiently recovered by precipitation with n-hexane. The purity of Ax was thereby raised to 70.2 wt% with a 63.9% overall recovery of the initial

content in the cell exts.
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:970228 CAPLUS
DOCUMENT NUMBER: 124:25946
ORIGINAL REFERENCE NO.: 124:4915a,4918a
TITLE: Carotenoids in the tiger prawn Penaeus esculentus during ovarian maturation
AUTHOR(S): Dall, W.; Smith, D. M.; Moore, L. E.
CORPORATE SOURCE: Division of Fisheries, CSIRO Marine Laboratories, Cleveland, 4163, Australia
SOURCE: Marine Biology (Berlin) (1995), 123(3), 435-41
CODEN: MBIOAJ; ISSN: 0025-3162
PUBLISHER: Springer
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Female P. esculentus were collected by 15-20 min duration trawls during 1990. Carotenoids were analyzed in the digestive gland, abdominal muscle, the remainder of the body (hereafter called integument), and ovary of prawns in stages 2-4 (fully mature) of maturation. The only oxycarotenoids (xanthophylls) identified were astaxanthins or astaxanthin esters; occasionally low levels of β-carotene were detected in the digestive gland. The concns. of astaxanthin monoesters (AM) and diesters (AD) were highest, with only minor amts. of free astaxanthins (Ast), except in the maturing ovaries, where free astaxanthins predominated (<80% of the total carotenoid). Of the total carotenoid, 82-94% was in the integument, but at maturity the digestive gland contained 10.7% and the ovary 5.6% of the total carotenoid. Only the ovary increased in mass during maturation, reaching <5.2% of total prawn mass. During this period, digestive gland concns. of AM, AD, and Ast all increased (total 20-120 μg/g); levels in the muscle and integument varied little throughout maturation (total .apprx.0.4 and 100 μg/g, resp.); ovary AM levels remained low throughout (1.5-1.2 μg/g), AD increased from only 2 to 5 μg/g, but Ast increased from 2 to 34 μg/g. Apart from the ovary, AM concns. were the most variable. In common with other decapod Crustacea, the maturing ovary of P. esculentus contained high levels of carotenoids, indicating that these may have an important role in early development. The natural diet of P. esculentus includes a variety of carotenoids, but except for a little β-carotene, the digestive gland, where absorption occurs, contained astaxanthins, with only an occasional trace of β-carotene. This suggests that the conversion of dietary carotenoids to astaxanthin occurs soon after ingestion.

L8 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:253857 CAPLUS
DOCUMENT NUMBER: 118:253857
ORIGINAL REFERENCE NO.: 118:44091a,44094a
TITLE: Research note: carotenoids in combs of capercaillie (Tetrao urogallus) fed defined diets
AUTHOR(S): Egeland, E. S.; Parker, H.; Liaaen-Jensen, S.
CORPORATE SOURCE: Norwegian Inst. Technol., Univ. Trondheim, Trondheim, N-7034, Norway
SOURCE: Poultry Science (1993), 72(4), 747-51

CODEN: POSCAL; ISSN: 0032-5791
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The carotenoids in the supraocular combs of male capercaillie offered 2 different, specified diets were examined quant. and qual. Birds offered the diet richest in carotenoids (zeaxanthin and lutein) experienced the highest carotenoid concns. (36 μg per bird). (3S,3'S)-Astaxanthin diester, accompanied by lesser amts. of its monoester and the free diol, were the major carotenoids, compatible with a metabolic conversion of (3R,3'R)-zeaxanthin by the birds.

L8 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1982:33841 CAPLUS
DOCUMENT NUMBER: 96:33841
ORIGINAL REFERENCE NO.: 96:5593a,5596a
TITLE: Ensiling in acid - a method to stabilize astaxanthin in shrimp processing by-products and improve uptake of this pigment by rainbow trout (Salmo gairdneri)
AUTHOR(S): Torrissen, O.; Tidemann, E.; Hansen, F.; Raa, J.
CORPORATE SOURCE: Inst. Mar. Res., Matre Aquacult. Stn., Matredal, Norway
SOURCE: Aquaculture (1981), 26(1-2), 77-83
CODEN: AQCLAL; ISSN: 0044-8486
DOCUMENT TYPE: Journal
LANGUAGE: English
AB astaxanthin [472-61-7] Is stable in an acid silage of shrimp processing waste, except for a slow conversion of its diester to the corresponding monoester. The digestion by rainbow trout of the astaxanthin present in this waste material was improved by ensiling, to .apprx.71% as compared to 45% in the corresponding fresh or dried material. Also the rate of accumulation of the pigment in the fish muscle was markedly higher in fish fed the silage diet than those given fresh or dried shrimp waste.

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FILE 'CAPLUS' ENTERED AT 11:08:23 ON 21 JUL 2008

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L1          3322 S ASTAXANTHIN OR XANTOPHYLL
L2            86 S L1 (L) MONOESTER
L3             1 S L2 (L) (CAPRYLIC OR OCTANOIC)
L4             0 S L2 (L) (CAPRIC OR DECANOIC)
L5             0 S L2 (L) (LAURIC OR DODECANOIC)
L6             0 S L2 (L) (CAPROIC OR HEXANOIC)
L7            49 S L2 NOT HAEMATOCOCCUS

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     FILE 'CAPLUS' ENTERED AT 11:38:01 ON 21 JUL 2008
L8             4 S L1 (L) CONVERSION (L) DIESTER (L) MONOESTER

     FILE 'STNGUIDE' ENTERED AT 11:51:01 ON 21 JUL 2008

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